NEW WORLDS SCIENCE FICTION

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The unexpected (and probably welcome), change in price and format of this issue will undoubtedly come as quite a surprise to most readers, inasmuch as the only advance information so far released has been that contained in our companion magazine *Science-Fantasy*, which was published a few weeks ago.

I owe you all an apology for not warning you further in advance, because I *did* know these changes were forthcoming long before out last issue went to press. The difficulty at that time was the uncertainty of the many factors governing the changeover—in particular production problems dealing with the art side and the necessity of suddenly doubling our productivity, and incorporating book-length novels in pocketbook form. So, when the March issue went to press (in February), we were not sure whether the changeover would take place with this issue or not.

Just at a crucial moment, when as many as six cover paintings were being worked out, Gerard Quin's father died, which necessitated our top artist having to rearrange his production schedule. Providentially, new artist Hutchings "found" us at just the right time, and his first painting appears on the first issue of *Nova Science Fiction Novels*. I think we have quite a find in him.

Problems and troubles continued to mount up—most of them insignificant—but sufficient to delay this issue by a week or so. These should be entirely overcome by the time No. 22 is published, and from there on I intend to develop *New Worlds* into an even better magazine than it has been in the past three years.

We are all rather pleased with the new set-up (which was, incidentally, planned as long ago as last December), and it but remains to see what *your* reaction is, although you won't have very much opportunity to criticise the literary standard of the contents, which will remain as high as ever. In fact, there are some magnificent stories on hand by all our regular authors, plus some commendable work by newcomers. Proof of the literary quality of *New Worlds* came recently in the results of a popularity poll on magazines run by the Liverpool Science

Fiction Society. Out of a total of thirty-three American magazines and three British (excluding pocketbook series entirely), *New Worlds* was rated *fourth*—topped only by *Astounding Science Fiction*, *Galaxy Science Fiction*, and *The Magazine Of Fantasy and Science Fiction*, American editions and not British Reprint editions. Most American readers also vote us into fourth place in the world market.

That's pretty good—but not good enough!

Our new "digest" size has not deliberately been modelled upon the current American magazine trend (which has developed since 1944), but solely because it is the most economical one for us to publish under the new arrangements —just as our old size was most practicable at that time. While, in America, there is a growing feeling that the digest-size magazine has had its day and there will soon be a return to the bigger-and-better magazine, I am convinced that in Britain, at least, the smaller more compact magazines are here to stay.

A lot of planning has gone into the change-over of *New Worlds*, and it would be impossible to credit any one person for the result you now see. Apart from our own staff, we have received hundreds of letters from readers praising, criticising and suggesting, and all these have been carefully checked and the pertinent points noted. As much credit must go to you readers as goes to ourselves. I hope you will be as pleased with the results as we are at this rather early stage, for there are a lot of minor improvements still to come.

Science-Fantasy will come under the new format as from its next issue, but at the moment I want to draw your attention to the new pocketbook series. Starting with John Beynon's fine Martian story *Stowaway To Mars* available now, we are leading off with what will undoubtedly be the finest series of science fiction pocketbooks this country has ever seen. Modern novels by outstanding American writers feature prominently in the next three titles—*Bullard Of The Space Patrol* by Malcolm Jameson, *Renaissance* by Raymond F. Jones, and *Cosmic Engineers* by Clifford Simak are but forerunners of a series every reader will want to keep permanently on the bookshelf.

JOHN CARNELL.

Once every 44 Earth-days the technicians working in Mercury's twilight zone rode the twilight rail to service the radio booster stations—accompanied, as always, by the silent Mercurians.

RIDE THE TWILIGHT RAIL

By E. R. James

Illustrated by QUINN

"How long have you had this?" The M.O. lifted his head.

Signalman Mercer stared at the little, weeping sores between his spread fingers. "Three weeks," he muttered.

The M.O. nodded.

Mercer licked his lips. "It's not . . . "

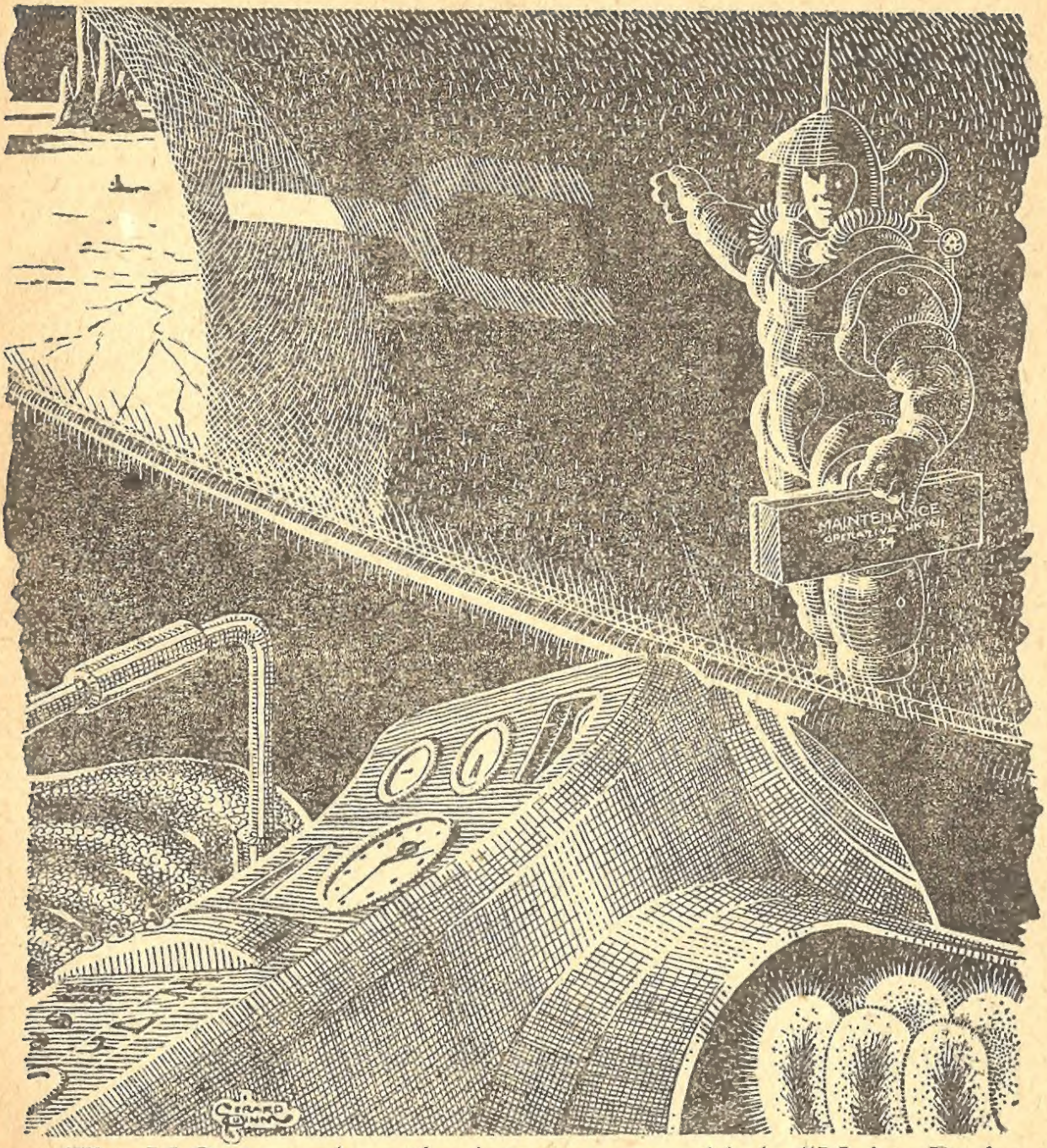
"No." The M.O. rinsed his hands in the surgery sink. "No, you won't be going back to Earth with silicon trouble. It's a form of dermatitis peculiar to Mercury . . . " He leant across his desk and pressed the button on the intercom. marked O.C.

He looked back at Mercer. "I know we've been short-handed waiting for the replacements, but you should have reported sick before . . . "

Mercer stared at his sores without expression.

The M.O. frowned. Mercer was a good man; yet even the best here were torn between a sense of duty to the little community of the Mercury Retransmission Station and a desire for a blighty one. Sometimes, as in this case, a man might persuade himself he was serving both ends. "I suppose Sergeant Myers told you to go sick?"

"Yes, sir."



The M.O. turned as the intercom. crackled: "Major Parke speaking."

"M.O., here."

"Yes, Captain Jackson?"

"Mercer going on a treatment of vitamin shots and rest. It'll take about ten days, perhaps longer. Fairly advanced case."

"Mercer?" In his tiny sitting room, Lieutenant Parke, Acting Major, rubbed his freshly bathed body absently with the towel and looked over the two small easy chairs at his own fresh face in the mirror. Another man off duty . . . Well, at

least Signalman Mercer wasn't malingering like those two replacements who'd come in the day before yesterday. "All right, Captain. Thanks for telling me at once."

He pressed the operator button.

"Yes, sir? Switchboard here."

"Major Parke speaking. I'll want Sergeant Myers on orders."

"Yes, sir. Wilco."

The operator yawned as he switched up an all-speaker hook-up.

"Attention. Attention. Sergeant Myers to report to orderly room at 0900. I repeat: Sergeant Myers to report to orderly room at 0900. That is all."

Caleb Myers, turning back from looking at the little speaker above his bed, resumed his vigorous brushing of his cropped, greying hair.

He had expected that. After ten years on Mercury he had known exactly how the M.O. would react. In a way it was a dirty trick on Mercer, who had already served the regulation time on Mercury. A routine trip on the twilight rail to the automatic retransmitter on the other side of Mercury, and a spell in spacesuits doing maintenance would have aggravated his condition. Replacement or not, he would have been back on Earth with his wife and kids within a month . . .

But—well, after that new man had pointed out the sores, no self-respecting sergeant could go on turning a blind eye . . .

He rose to his feet. Slipping his arms into his tunic jacket, he settled it neatly on his wide shoulders, zipped it to the regulation two inches from the top.

The faded photograph of a young woman with a baby on her knees drew his attention to the top of his bedside locker. For a moment his eyes glazed over in retrospect; then he glanced at his watch. 0740 hours: time to look in on the replacements before breakfast.

In the passage that ringed the ground floor level of the concrete dome that was the Mercury Retransmission Station and Observatory, he paused, looking out of a porthole.

To the right, five seconds of arc above the blackness of the horizon, Earth, soon to be in opposition with Mercury, pierced into his mind as a bright beckoning star, frequently hazed by dust.

Dust, ground by the winds of the twilight belt to the finest of powders . . . by the thin poisonous gas covering the planet's

face so shallowly that it was undetectable a mile above the average surface . . . dust—

It streamed like a rushing, brownish tide in the floodlights from the dome, skirting the hard rock hill that was the dome's foundation, with a consistency like water. Brown, lethal water.

Lethal to humans at any rate. Even if it meant life to the Mercurians . . .

The Mercurians! A dozen or more of the utterly alien beings, outwardly featureless, huge; inwardly a complexity of crystalline structures with a silicon base, stood on the edge of the pool of light. Completely alien.

They seemed to "see;" yet they had no eyes. They seemed able to communicate; yet sound waves would not carry in the thin air and muffling dust. They certainly lived and moved and grew and had some kind of social intercourse; yet at no point in the long study of them had any resemblance to humanity or any other Earth creature been detected.

They knew no struggle for existence, for the winds brought them their "food." Of machines they had none, lacking the need of them; yet they understood, or appeared to understand more than the basics of mechanics.

Sergeant Caleb Myers shivered. The unknown was always frightening. He knew and every other member of the Station knew that mankind was no more than an unbidden guest on Mercury. At any moment, those—those *things* could kill or destroy—.

He glanced up as the roving searchlight on the top dome picked out the concrete pillars and monorail of the twilight line to the retransmission station on the other side of the planet.

At 1200 hours he and another signalman—yet to be chosen to replace Mercer—would be riding that rail, their little electric car following that of the engineers. Every 44 Earth-day periods, that is twice in each of Mercury's revolutions of the Sun, when the whole of the rail was on the line between frigid darkness and blazing light, this trip had to be made.

It had to be made. Always was there need of it. And this time he had no choice of men. Only one of the new men in his maintenance section of three was fit. Mercer was really sick; and the other new man was . . . . well, did it matter whether he was malingering or really sick? The result was the same out here.

Caleb grimaced at his own faint reflection against the darkness outside, and turned away.

Twenty seconds later he strode into the No. 2 Signallers' bunkroom. Mercer's unmade bed seemed to mock him. The other man, sick or feigning sick, was sitting up in bed smoking a cigarette. His undoubtedly pallid face drew into strained lines.

Caleb swung on the third man. "Well, Signalman Fleet, how are you feeling after your second night on Mercury?"

"Fine, sergeant." Fleet's boyish face smiled; yet his eyes seemed to smoulder. He rested his large hand on the book in his lap.

Caleb's roving eyes fixed their sharp glare on the book. Beneath Fleet's hand, apparently used to keep the pages flat, was a gleaming spaceman's knife.

Caleb looked into the youth's burning eyes. "I think that knife would be better in its sheath."

"Yes, sergeant" The hand upon the knife twisted in eye-deceiving speed, and the knife was in its proper place.

Caleb, still meeting the other's stare, indicated the book. "What are you reading, signalman?"

"Raver's *Conquest of the Planets.* Chapter six. The Three Expeditions to Mercury. I have just learned that the first ship to land here merely made a passive survey; that the second carried an expedition to probe into the silicon-basis life that has evolved here - - - They had a pretty sticky time, didn't they, sarge? I mean, after they'd captured that Mercurian? What sort of weapon d'you think these walking crystals turned on those old guys?"

"I've no idea," said Caleb. "And I wouldn't advise you to try any experiments. We're the third expedition. Our job is to keep open the lines of communication between the planets . . . " He lifted his hands. "Believe me," he nodded, "after you've been here a few weeks and got the feel of the place, you'll be glad just to leave things as they are."

"Yes, sarge," said Fleet.

Caleb suddenly felt uneasy. And it was for no reason that he could put his finger upon—unless it was that the meekness of Fleet's schooled tones seemed in direct contrast to his blazing eyes.

After a few remarks designed to ease the impact of Mercury on the two newcomers, he went on to breakfast in the mess

quarters.

At 0855 he pushed open the door of the orderly room on the floor above. Seeing the M.O. sitting behind the table, instead of the clerk he had expected, he stiffened and saluted.

"At ease, sergeant," said the M.O. perfunctorily lifting his hand in an answering motion. He regarded Caleb narrowly. "Sergeant," he said slowly, "you and I have been here right from the establishment of this place. All the others have gone years ago. I don't know why you stay, and I don't wish you to tell me . . . But I've felt for some time now that there is some kind of bond of—of suffering, perhaps, between us."

Caleb's hands clenched. The muscles of his jaw worked.

The M.O. nodded. "Forget our differing ranks for moment. Tell me, if you will, whether you've ever seen this new man —Richard Fleet—before?"

"Seen him before?" Caleb felt for his pipe and, taking it out, turned it slowly in his hands. "It's not likely, sir. It's fifteen years since I was on Earth last, ten since I was on Mars. Fleet is less than twenty years old, I'd say."

"Mmm-yes. Queer, though. You were attached to the police during the disturbances on Mars, weren't you?"

"Yes." Caleb absently put the pipe in his mouth, then, remembering himself, took it out quickly.

The M.O. waved his hands. "For heaven's sake, smoke, man, if you want." He leaned forward as Caleb took out his pouch and began to fill the worn bowl. "I'll be frank. To do that, I'll have to break the rules and tell you this man Fleet is an "option" man. He's a convicted criminal who has chosen to come here for the period of his sentence instead of serving it in a Martian jail. I have reason to believe that Fleet is an assumed name."

"Indeed, sir?"

"Yes." The M.O's face reddened.

Caleb put away his pouch. Getting volunteers for Mercury had always been an almost impossible task. Few men could stand the isolation and ever-present strain. Ordinary rankers soon broke down. Only strong, independent spirits were suitable. It was rumoured that Mercer had a criminal background.

The M.O. fumbled with a cigarette, puffed rapidly for a few moments. "Of course I may be imagining things. But—Well, first of all, he's an 'option' man. Second, he asks me—I tend to be deliberately friendly towards newcomers—if

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NEW WORLDS
SCIENCE FICTION

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NEW WORLDS
PROFILES

Alan Hunter

1923

February born artist Alan Hunter, now over six feet tall, is a Technical Illustrator in a Drawing Office on the South-for-Sunshine Coast. Long interested in science fiction as a literature, he used to amuse himself with thumbnail sketches of the early stories he read. This pleasurable two-fold hobby eventually gave birth to his desire to write stories in the same vein, and he eventually submitted one to *New Worlds* together with an illustrated scene.

Although the story was rejected his art work was sufficiently developed to demand a steady series of commissions for the magazine—and he is still improving. Like Gerard Quinn, Alan has never attended Art School, but by sheer hard work in studying techniques has developed his own latent talent which he believes is present in everyone.

He has now organised a Fantasy Art Society to help develop newcomers to the field. Married in 1949, his attractive wife Joyce is always ready to lend a hand—or an eye or leg—if he has difficulty with an illustration.

there is a Caleb Myers here? Third, you used to be connected with the police on Mars whence he has come to us. Fourth, he asks the C.O. to ride the Twilight Rail with you on the next maintenance—he was refused that, of course. Fifth—I'll wager he forced you to make Mercer report sick this morning—Did he? Off the record, did he?"

"Yes."

"Thought so. Sixth, I understand he flashes his knife around as though he was very handy with it. Seventh, the other new man assigned to your section reports sick with every appearance of swinging the lead. I — "

The M.O. looked sharply sideways and Caleb realised the orderly room door had opened.

The clerk hesitated on the threshhold. "I can come back later, sir, if you wish. I thought you'd gone - - "

"No. I've finished." The M.O. stubbed out his cigarette with jerky movements. He crossed the floor, his movements as unsteady as a newcomer to the low gravity of the station. At the door he paused to look back. "I don't suppose it'll make any difference to what you'll do," he said. "You're not the sort to . . . so . . . But I felt I would like to tell you."

"Thank you, sir." Caleb saluted.

The M.O. lifted his hand in brief response.

As the door closed, the clerk sank down behind his typewriter. "The C.O. 'll be here in a few minutes, sarge."

"Yes." Caleb knocked out his pipe in an ashtray before looking up at the orderly room chronometer. 0910 hours. It was not like the C.O. to be late.

He turned smartly as the door opened again.

Major Parke returned his salute and beckoned him to follow.

Caleb stood stiffly while the Major seated himself. Finally they faced each other. .

"Sergeant, I have no idea what Captain Jackson had to say to you that was so important. Perhaps it will be as well if it is not mentioned here. Right?"

"Very good, sir."

Major Parke nodded. He switched on the desk recorder and rubbed his smooth face thoughtfully. "It appears, sergeant, that you will either have to take this new man, Fleet, or one of the experienced men—neither of whom I feel I can spare—from the first section. Are you agreeable to being accompanied by Fleet? I have examined his papers and find he is

qualified to maintain a robot station such as ours and that he has had experience of working in the vacuum conditions of the Martian moons . . . " The C.O. fingered his chin. " . . . so that your decision must depend entirely on your impression of the man during the short time he has been with us."

"He seems very self-assured, sir," answered Caleb in the monotonous tone he reserved for such recorded interviews as this. "I shall be quite satisfied to accept him as my assistant. It will be valuable experience for him."

The C.O. nodded and reached out. Having switched off the recorder, he leaned back in his chair. "Sergeant Myers," he murmured, "I am sure that the Central Records Bureau on Earth must think we run this place like clockwork—if they ever think of us at all."

He sighed and picked up a file of written reports. "I suppose you've seen these and know all about the usual crop of queer happenings at the robot station you're going to restore to normal?"

"Yes, sir."

"Mmm." The C.O. flipped pages and read for a moment or two. "This bit here - - about the time taken for re-transmission six days ago. Total time taken in receiving messages here: twenty-two hours, seven minutes; total time taken by the robot station in sending out the same messages, boosted up to reach destinations on the other side of the Solar System: twenty-two hours, forty-three minutes. What d'you make of that?"

"One of those things, sir." Caleb smiled wryly. "We know that the robot's emergency circuit went out of action immediately after the last maintenance run. The station here, however, was shut up because of the rising of the sun and we could do nothing, except trust that the other would develop no fault that the robot could not handle.

"Er — " Caleb leaned over the desk and indicated a progress report listed as having been received from Mars and passed on to Earth on the other side of the Solar System. "That message, sir, took exactly the time not accounted for. Just before it began being recorded by the robot, the good transmitter ceased to work; just after the message finished being sent over the land line from here, the transmitter resumed. The robot, noting this, began to transmit in arrear of reception over the land line. By the end of the day it had

caught up."

"Eeerie isn't it, sergeant?" The C.O. stood up. "Yet you must be right—even though the robot cannot repair major faults because it only has a limited number of replacements available to it—even though it's a deuced coincidence this single message was affected."

Caleb met the C.O's brooding gaze with a feeling of impatience. This was: one of those things. Nothing more. It made no difference. All messages had been received and duly acknowledged. No authority higher than the C.O. seemed to have noted the delay. So, why did it matter? Too much brooding over the unaccountables of Mercury just wasn't healthy.

He stiffened as the C.O. rambled on in the same vein; he made the answers expected of him: and all the time his irritation grew.

Dismissed at last, he marched out, inwardly seething, outwardly schooled to calm. Blast everyone for trying to probe beneath the surface of things! Men's past lives were their own affair; nothing mattered so long as the messages were getting through, over the immense distances, intelligible in spite of the Solar interferences.

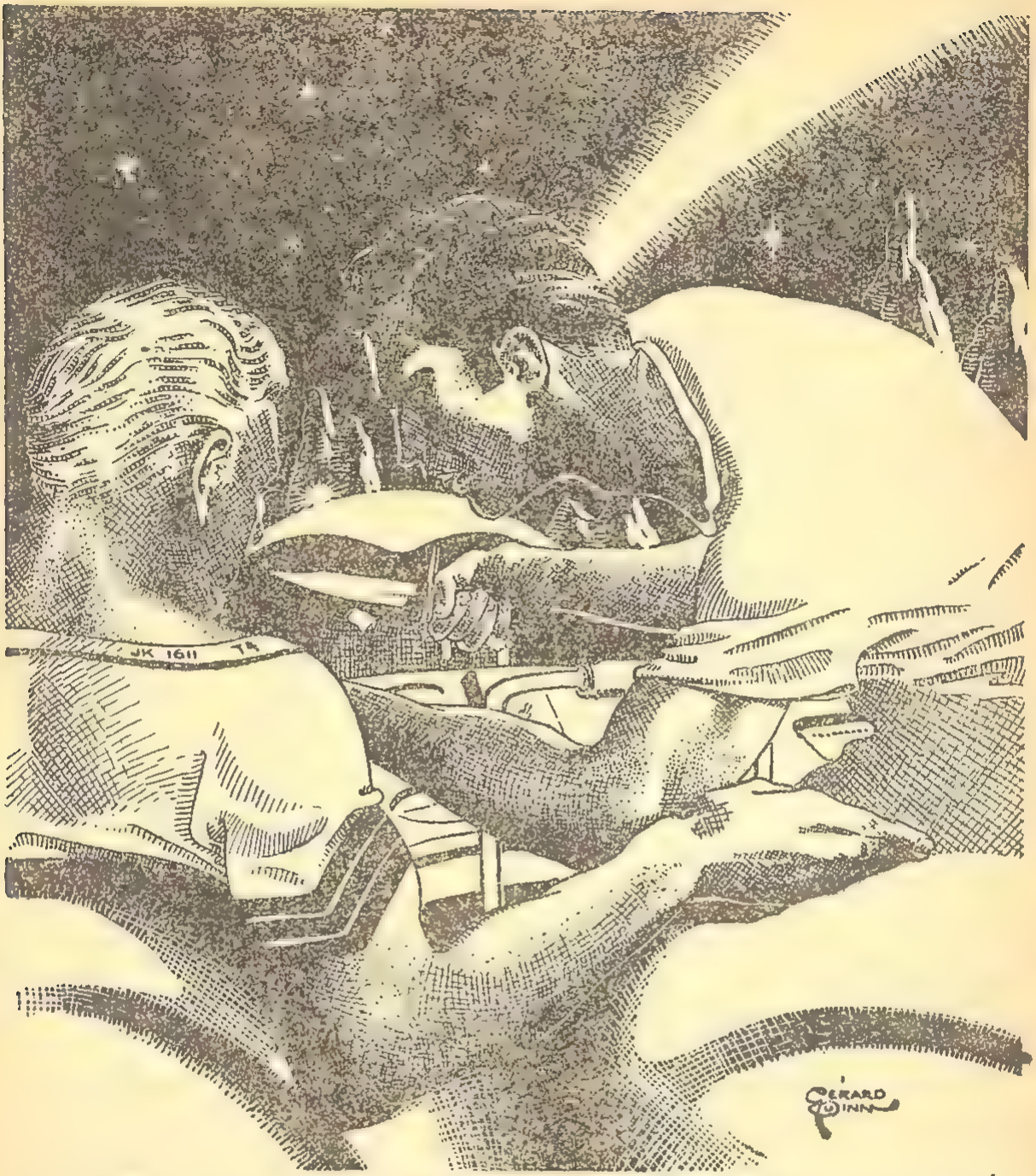
He went up the stairs to the receiving station six steps at a time. Had to work off this foolish irritation. Had to! In the little, confined world of the dome, bad temper was a plague that could infect all thirty-two members of the establishment.

Panting in spite of the low gravity, he concentrated his attention with an effort in quick consultation with the corporal-operator, getting the latest data on the robot he was to service.

Routine. Normally easily bearable; just at that moment a chore to his torn nerves.

Then down from below the giant radio mast, down to the engineers' rooms quarried out below the dome. Find that the sergeant he must see was servicing the auxilliary dynamos. Glory in shouting into the howling whine of the power station proper, feeling the vibration of power that must never stop, learning that the robot's consumption was below normal, that the twilight rail was apparently intact.

Go outside into the communication passages. Look at his watch. 1000 hours. So much time to be endured. Walk to his bunkroom, talk to one of the Space Pilots on the way without betraying his inner feelings, sink on the bed, thankful



for privacy, unable to face morning coffee in the company of other N.C.O's in the mess, and cover his face with his hands.

And then look at the photo beside his bed, the faded snap of his wife and son. And remember . . . Ten years ago. On Mars. The confused fighting of the disturbances. Then only the fact of getting a message through had mattered; not the manner of it.

A failed radio warning cost lives then, instead of mere money as now. When the retransmission station X2 had gone dead he had driven a half-track out to repair it. He had torn

the guts out of the engine. He had got there. But he had been too late. Unwarned, the tiny outpost on the other side of the desert had fallen to the maddened brown devils of Martians. It had been his fault . . . His fault.

People died easily out of the familiar habitat of Earth. The man, the scoundrelly Earthman who had sold guns and liquor to those same Martians, had also died easily . . .

Cold sweat beaded Caleb's face as he seemed again to stand with a spaceman's knife in his hand, watching the blood dripping from it and then freezing on it.

He knew what it felt like to be an option man . . .

Slowly he regained control of himself.

At 1130 hours he was in the monocar garage, methodically checking stores, tools, spares and the car itself, when Fleet jumped boyishly from the loading platform into the long cabin.

"Hello, sarge. I've been waiting for you . . ."

"Waiting?" Caleb turned with a start. "Oh, yes. Sorry. I should have called for you in the duties room." He explained what he was doing and quickly ran over what he had already done.

Fleet listened attentively. "It's not so very different from the monorail expresses that run between the Martian cities, is it, sarge?"

"No." Caleb was silent a moment. They had been building the first of the elevated, single-track lines between the principal settlements in his time. "No, I suppose not. I always think of them, myself, as being like the trams that used to run in Earth cities before I was born. They were much the same size . . ."

He noticed the engineer sergeant in charge of the first car beckoning him out. Fleet followed him to listen to the last orders from the C.O. who had come to make the regulation recording of send-off procedure.

Then they were back in the car, sitting side by side on the bench seat. Caleb glanced over his shoulder at the strapped down tools and materials behind them, then relaxed, looking at the engineer's car in front. "Soon be off now," he said. "Frightened?"

"No!"

Struck by the cold vehemence of the answer, Caleb glanced sideways. Fleet seemed tense; yet it was not the nervy tenseness of fear.

The sounds of the pumps drawing the air out of the hangar gradually faded as that precious primary of life thinned to near vacuum. A line of utter darkness divided the garage doors and widened swiftly as they slid apart.

The car vibrated for a moment and lifted slightly as the horizontal driving wheels gripped either side of the rail beneath its flanged top. A red light began winking on the little control panel jutting over their knees. Other dials glowed showing cabin air pressure, dome time, voltage across the poles of the electric motors beneath the floor of the cabin, and other such vital data. In spite of the Sun still being below the horizon the radio link with the engineer's car crackled with the Solar interference.

"Tranke here," said the engineer's voice through the crackle. "Moving off, now."

"Noted," said Caleb and glanced at the dashboard clock. 1200 hours. Dead on time.

The car ahead glided off along the rail. Its lights dwindled rapidly in the darkness outside, the head and shoulders of one of the four engineers within its long cabin was lost to view. It shone steadily, no brighter than the stars infinitely more distant beyond it.

"How long's the first section of rail?" asked Fleet.

Caleb turned his head. "Twenty Earth miles. It's powered by the dome dynamos. Sections after that are only ten mile lengths and each has a separate power unit driven by radiation energy stored by a Solar Converter. As close to the Sun as this, these converters are so efficient that no devices to switch on power as we approach are needed; it flows all the time. The — "

He broke off as the red light winked out and an amber light beside it began to flash on the dashboard. He reached forward, switched on the headlights, glanced over the dials, and opened the throttle. The motors below the floor sent an initial quiver through the car and it began to move forward, rapidly gathering speed.

Suddenly the blackness of Mercury's dark side was shutting them in. The concrete pillars supporting the rail twinkled below for a few moments and then grew blurred with their speed, presently showing only as a continuous grey haze over which they seemed to float. The steel rail ahead, rustless on this world devoid of water, gleamed steadily in the headlights,

a narrow, man-made viaduct that half encircled the planet.

Caleb continued to open the throttle, watching the speedo. With the needle at 500 m.p.h., he leaned back in his seat, relaxing. All sensation of movement had gone. They rode the twilight rail, seeming to float above a grey haze with the rail like a blunt steel spike before them, shut in on either side by the blackness of the landscape, motionless beneath the apparent dome of unwinking stars.

Fleet stared at the speedo. "What about meteors? With no air to stop them, don't they ever damage the rail we're on?"

"I was going to tell you about that . . . " answered Caleb, taking out his pipe and charging its bowl. "There is a certain degree of danger always present while riding the rail. A big meteor buckling it, but not severing it, would be fatal to us, but big meteors are few in number, fortunately. Our springing can handle small faults in the rail. You'll feel a few bumps as we go, however."

He held a lighter to his pipe until it was drawing nicely. "How much d'you know of the rail itself?" he asked with a sideways glance.

Fleet stared ahead, out of their little oasis of light. "Not much. It's comparatively straight, avoiding only two or three large craters. It's . . . about a hundred feet above the surface on the average?"

Caleb nodded. He glanced ahead, then back at the intense eyes of his companion. He smoked steadily, at his ease for the first time since leaving his bed that morning. "The rail sections are coupled together in threes by a method I have never been interested enough to find out. Numbers one, two and three are linked, numbers two, three and four, numbers three, four and five and so on. This means that when we enter any section we can tell by looking at the dashboard where the car in front is in relation to us. Red light means it's on the same section, amber on the one ahead, yellow on the one ahead of that, green that the two sections ahead of us are free of traffic." He drew thoughtfully on his pipe. "These connections also carry power so that if any one section is knocked out, those on either side of it carry its load. But we don't have to worry about that. It's the engineer's pigeon."

"I get it," said Fleet. He lighted a cigarette, inhaling deeply.

"Bumps ahead!" warned Tranke's voice through the background crackle of interference.

Caleb reached out, switching to *Send*. "Thanks for the warning, Ted."

He looked back at Fleet. "They'll straighten them out on the way back if there's time before the Sun rises."

"Before the Sun rises," echoed Fleet. "Does sunlight make so much difference then?"

"I'll say it does. Direct radiation of the Sun at this range pushes things up to 400 centigrade. Can't work in conditions like that. That's why we make this run only every 44 days." He fondled his pipe.

"Watch out for those bumps," he warned.

The car shook violently, steadied, shook and steadied back into its vibrationless onrush.

"Every 44 days?" queried Fleet.

Caleb smiled. "That's when the rail is wholly in twilight. The eccentric orbit Mercury describes around the Sun causes it to seem to wobble. You know it doesn't revolve every twenty-four hours like Earth, that, like Earth's moon it always presents the same face to its host? Well, this lack of revolutions and the apparent wobble means that three-eighths of the planet is always in darkness, three-eighths always in light and the remaining quarter half the time in light and half in darkness. The rail's in the middle of this twilight belt so that twice in Mercury's year of 88 days it is totally in twilight for about two days at a time."

He pointed with his pipe stem to the left of the car. "You can just see a faint redness colouring the dust on the horizon, if you look closely."

"Yes. Hey!" Fleet clutched at the seat as the car shook.

Caleb smiled. "They don't always warn us." He looked sharply at the dashboard as the amber light was replaced by the red and as the power drained out of their enginess. "It's all right," he assured Fleet. "We must have been catching them up."

He smoked on and reached out as the lights changed back.

But Fleet caught his arm. "Let me take her on, sarge."

"Eh?" Caleb stared into the burning eyes of the young man. "Why?" he asked bluntly. "Why the rush?"

"I'd like to — " Fleet averted his eyes, staring straight ahead. "Suppose something happened to you? How'd I get her back to the dome?"

"I see your point." said Caleb. He leaned back, fingering

the half burnt tobacco down into the bottom of his pipe. "There's no rush . . . " He pointed the pipe stem at the throttle lever. "Mostly everything is automatic. See how that lever's gone back to the shut-off position."

"Yes." Fleet took hold of it with his left hand, squeezing the release.

Caleb considered the young man's eagerness. "Treat it gently."

"Yes." Fleet eased it back and the motors cut in and the car shuddered with their braking effect. Fleet jerked it wider, the car leapt forward; he closed it a little, watching the speedo.

"Keep her at 500," said Caleb as the needle climbed smoothly. "That's the style. You're doing well. The other lever's the emergency brake. It's not likely you'll have to use that. There's a device that'll bring it on automatically if the line ahead is cut. You'll need it only if the engineers stop and do not clear the line ahead, or perhaps not until we reach the robot re-transmitter."

Fleet nodded.

Caleb settled back comfortably, his pipe drawing nicely. With their speed constant, they seemed again to float between darkened surface and starry sky. An occasional shuddering reminded them of the rail.

Presently Caleb knocked out his pipe. "Rumour has it," he said softly, "that you've come from Mars. I expect it's changed greatly since I was there . . . "

Fleet's lips thinned. He stared out at the rail.

Caleb, receiving no answer, presently leaned his head back. "Call me in two hours," he said. "Don't fail. We'll both need rest before we're back in the dome."

"I'll call you." Fleet smiled out at the darkness as though at a secret joke.

Caleb dozed fitfully.

An hour passed. Suddenly the red light flickered through Caleb's eyelids, alerting him. The loudspeaker crackled with static: "Tranke here. Have stopped." Caleb motioned Fleet to apply the brake.

"Half pressure," he said.

Tranke was talking in an aside to those with him. His voice suddenly gained in volume. "Three pillars gone, Caleb. Rail seems O.K., however. We'll have to reverse half a mile, so that we can get a sound pillar to use for swinging clear.

Can you stop in time?"

"Full pressure on those brakes," said Caleb to Fleet. "Hang on to the grips in front of you." He caught hold of them himself, taking the strain . . . as the car held back hard.

"All right, Ted. Brakes full on."

Motionless on the rail, they watched the other car come smoothly out of the darkness. The lights of the two cars shone out over a considerable area of the dust below, gleaming on a crater edge as sheer as a cliff face.

Something moved out there, attracting Caleb's attention. Mercurians. Coming to observe the intruders, as they always did. Caleb kept an eye on them, observing Fleet at the same time, while they waited.

Fleet, although he did not appear to have seen the watchers, fingered the haft of his knife and looked from Caleb to the car ahead as engineers in spacesuits rushed the job of connecting a temporary framework turntable to the pillar.

Suddenly he gripped Caleb's arm. "Don't we have to go outside?"

"No," said Caleb.

Fleet averted his eyes.

Within ten minutes from halting they were on their way again. Four hours after starting from the dome the skyline to their left began to show a definite reddish tinge.

Caleb watched it deepen to a thin line of lurid light. When Mercer had gone with him on the last trip, they had talked of the other worlds they had known, of the people they remembered. It had been a pleasant break from the faces of the sergeants' mess. He eyed Fleet.

"Ever been to Earth?" he asked.

Fleet slowly straightened on the seat. "I have been everywhere . . . " He turned, facing Caleb. "You're burning up to know all about me, aren't you, Sergeant Caleb Myers?" He smiled. "Well, I was born on Mars. My mother died when I was very young. My father, like thousands of other colonists died during the disturbances. I enlisted in the army. I finally came here. That suit you?" He leaned back in his seat.

Caleb frowned. He breathed deeply.

Outside, around the car, rocky peaks and crater tops shone with harsh brilliance. Above, the sky some of its blackness, becoming tinged with purple as the dust storm that accompanied the division of light and darkness swirled brown around the pillars below them.

Caleb adjusted dark shades over the windows of the Sun side of the car. Suddenly, away on the horizon, a line of red, the width of the Sun seen from Earth, glared through the shades. Dust faded swiftly from the thin atmosphere, leaving it brilliantly lit below a sky still starry but slightly less dark. Incredibly long shadows of the higher rocks flickered over them as the car hurtled on.

Four more hours dragged by, before the green light on the

dashboard was replaced by winking yellow, then amber, then red, warning them of their approach to the robot station.

Caleb ran the car into the garage of this smaller dome, braked it to a halt and stood up. "Nine and a half hours. Not bad time for the trip, considering the halt on the line."

He turned to find Fleet staring at him.

"I'm going to kill you," said Fleet. With a sudden, expert movement of his hand he drew his knife.

Caleb's breathing halted. His heart seemed to miss a beat. He looked up from the gleaming blade into the young man's intense stare.

"Are you crazy?"

"If I am, you have made me so. My real name isn't Fleet. I am Richard Fluke. You murdered my father ten years ago."

Caleb flinched as the knife point stopped an inch from his stomach.

"Wait!" he gasped.

The young man smiled. "Men die easily in space, don't they?"

Caleb swallowed. "Perhaps you have a right to kill me . . . If you pitch my body outside on this side of Mercury, though, you'll put a noose around your own neck. You've forgotten that for the next 44 days there'll be frigid darkness. The next maintenance car 'll find my frozen corpse . . . "

"Yes . . . That's true . . . I'll have to take your body back along the line and drop you where the rising Sun will frizzle the flesh from your bones."

"Yes." Sweat beaded out from Caleb's face, trickled down, salt as he licked his dry lips.

Richard Fluke watched him. "No," he said. "You'd bleed. That damned M.O. is a friend of yours. I slipped up when I asked him about you. But I was afraid you'd gone, that I'd missed you—after all the years it's taken me to catch up with you. I'll have to take you back."

The knife blade flashed. In spite of Fluke's words, Caleb tensed. But the expected pain did not burn into his vitals. Instead, his uniform went slack . . .

His severed belt fell quite slowly, curling up snake-like as the knife and its sheath clattered on the floor.

"March around the end of the seat!" snapped Fuke. "Find me some wire so I can fasten you up."

"No." Caleb jerked as the knife point pricked through his

uniform. "No," he repeated. "We came to maintain the robot. I'll not go back without first doing so."

For a moment he thought it was the end of the line for him. His nails dug into the palms of his hands. No one wanted to die like this. Perhaps he could overpower Fluke with a sudden movement — Mustn't underestimate his opponent, desperate though his plight might be . . .

And yet —

No, he had done enough violence for one lifetime. With the knife point pricking his quivering skin, he waited.

Although the monorail car had stopped; he still rode the twilight rail. On one side of the thread of his life was the burning heat of killing; on the other the utter chill of death.

"Very well," decided Fluke. "You shall do your maintenance . . . on this planetary toy."

Caleb relaxed as the knife drew back from his stomach. Fluke kicked the belt on the floor, sending it slithering away. Caleb turned and, closely followed by the other, went back along the car and broke open the spacesuit lockers.

Fluke watched him dress himself, even went so far as to help in the sealing of the helmet, escorted him to the airlock in the centre of the car, carrying the repair kit for him.

Caleb passed outside into the garage. On the loading platform, he set down the bulky kit, panting with the weight of it—he could not have lifted it on Earth—and almost sick with reaction. He leaned against the side of the car, gathering his strength, staring at the lighted concrete walls of the garage.

Upon it gesticulated the shadow of a man. Caleb tilted his helmet back to look up at Fluke. Fluke pointed at his ears and mouth and towards the car's radio.

Caleb switched on his radio. "What it it?"

"Thought I'd never make you hear," snapped Fluke. "I forgot to say I'll give you six hours before I start back. You'd better be here by then."

"Twelve is the regulation time. If we go back any earlier, they'll suspect you of leaving me. In the radiant heat of the dome here I may decompose a little before they find me, but I can leave them a message."

"I should have killed you," said Fluke.

Caleb smiled to himself. "I don't see why. There is no heaviside layer on Mercury, so that I can't send a message by radio. The landline and the outgoing signals are controlled

by the robot, which is sealed in such a way I could not enter it without the key which is now some four and a half thousand miles behind us."

He shouldered the repair kit and left a trail of fine dust rising behind him as he crossed the platform to the circular hatchway.

He switched on his headlight. After staring for a few moments at the sealing device which should have been fastened, but wasn't, he pulled the hatch wide.

Closing it, but not clamping it, behind him, he climbed the ramp up the passage to the circuits room. He set down his burden and switched on the dome lighting.

He let his gaze circle the checking panels and exits, then seated himself before the master panel. Aerial readings first. Yes, the signals were streaming out into space off the primary aerials that rose out of the dust around the dome. He switched over to the duplicate, emergency aerials and waited, watching.

The robot chose its own time and slipped into the alternative circuit during a brief pause in transmission. The needles quivered with modulation as before. Caleb returned the switch to its previous position. Station functioning.

Satisfied, he began at the other end of the main circuit, step by step from the power intake to the signal going out. The work absorbed him to the exclusion of everything else. He leaned back in the seat, nodding to himself within his helmet. All in order.

He made the familiar journey to the rooms containing the expendable parts of the great transmitter, filling in the gaps in those used by the robot, lightening the burden of his kit. He came upon one section, where the power stress was high, and noted that all the reserve parts had been used. Filling that rack with piezo-electric units made quite a difference to his load.

When he had made all the replacements necessary, he paused, resting. And he remembered what the C.O. had said about the mysterious break in transmission. Turning this over in his mind as he retraced his steps, he paused before the rack that had been empty. On impulse—for where else could the fault have occurred?—he triggered an automatic change-over, and caught the old unit as it slipped into the waste chute provided for it.

As he stared at it resting in his gloved hand, his flesh crept.

For, instead of being a familiar unit, it was a bare crystal. How had it got there? He looked around the room, leaning first to one side and then the other to see behind the orderly array of apparatus.

He slipped it into a pocket of his suit, filled the space at the end of the spares rack and went down to the circuits room.

Methodically he checked through the emergency circuit, finally located the fault in a tangled mass of broken leads. Sorting these out, splicing them, took much time. It was not until he stood back, the work complete, that he suddenly wondered how they had been damaged.

He stared at them, then looked up and down the communicating passage in which he stood. Yes, they were a few inches out of their proper place along the passage. He pushed them back into the clip on the wall from which they had sprung. Their obstruction to the passage had not been great. A man would not have noticed it . . .

A man would not have noticed it . . .

But a Mercurian—who had no eyes and who was expecting a certain amount of room in which to move—

Caleb discovered his mouth was dry as dust.

He glanced at his watch. Seven hours since he had began his lonely task. He sucked water from the suit's supply and triggered a food capsule into his mouth, chewing it as he went back through the silent maze of passages, back to the circuits room.

His own sounds of breathing and chewing filled his suit, tending to make him strain his ears for sounds that he could not hear in the near vacuum about him.

Were the Mercurians somehow watching his every move? The sensation was uncanny; for he could think of no explanation with a scientific basis. What creature on Earth could "see" without eyes? He seated himself before the master panel. Bats could. But they used sound echoes in the way that men used radar echoes.

He suddenly jerked upright. Radar!

"Radar," he murmured aloud. "Beings formed of complex crystalline structures of sillicon . . . Yes, it might be possible . . . It must be . . . "

The Mercurians communicated on their airless world in exactly the same way as did mankind; by radio signals; but they did it naturally. They "saw" by means of radar-like echoes.

And, yes that might even explain how they had killed those men, so many years ago, who had taken prisoner one of their number . . . Vibrations could shatter glass, could drive men mad—could surely be used as weapons?

Trembling with excitement, he switched on the TV camera eyes upon the top of the dome. Breathlessly he put the face-piece of his helmet against the correcting twin glass panels that jutted towards him. The outside world, lit by search-lights that moved in sympathy with the cameras, jumped into his mind with stereoscopic clarity. Against a background of heat-eroded craters and tall girder masts, the Mercurians stood, formless things, watching.

And a voice came over the radio, setting Caleb's nerves on edge: "What's going on? What are you mumbling about to yourself? How much longer will you be?"

Fluke! Disappointment swept over Caleb like a cold douche. But of course it was Fluke. If the Mercurians could communicate, they would have done so long ago.

"I've nearly finished . . . " Caleb bit his lip. He had, in fact, finished the essential work. Robot and landline were in good working order. He could go any time now. "All right," he said, I'll come down at once."

He did not remember his repair kit until he was clamping up the hatch leading on to the loading platform. But he decided swiftly and sombrely that it did not matter.

The outer door of the airlock was open. He passed through and stood before Fluke who motioned for him to take off the spacesuit.

He obeyed. Fluke motioned him towards the seat.

He shook his head. "There's no means of turning the car. We use the duplicate controls at the other end." He walked that way and seated himself.

Fluke stood behind him. "You drive. Do as you told me to do. Take it steadily!" he warned sibilantly. "Steadily!"

"I will." Caleb turned sowly in his seat. "But first I've something to say." He watched the mocking incredulity grow in Fluke's eyes as he went over what he had done and the conclusions he had reached while within the transmitter dome. "I see you don't believe me," he ended flatly. "I didn't expect it to make any difference between us, anway. All I want is for you to tell the others when you get back."

A grim feeling of futility swamped his thoughts. He waited

with cold fatalism. All the tedious years on Mercury must, in some measure, have atoned for the terrible thing he had done before agreeing to come here. Perhaps, in whatever life there was after death, he would eventually find the peace of mind that was denied to him in this.

The flat of the knife blade touched the back of his neck like ice. As though from afar off, he heard Fluke order:

"Start the motors."

"Very well." Obediently Caleb opened the throttle.

The car gathered way, running out into the darkness. To the right, a thin line of red glowed on the horizon. Occasionally, high peaks and crater walls flickered briefly, still touched by the rays of the departed Sun.

Caleb sat silently, strangely at peace. Long ago he had adjusted himself to the twilight rail between the extremes of violent life and equally violent death that was normal life.

Very slowly the redness faded from the horizon. Fluke shifted impatiently a thousand times before the Sun once more reddened the horizon and then, at length, edged slowly and majestically up, first a glaring red, then a pin-prick glare, then a line that spread and spread and thickened in its centre to an enclosed arc of unbearable brilliance with the Solar prominences clearly visible through the dark shades clamped by Caleb to the windows on their right.

Caleb sat hunched down on the seat, staring ahead, as aware of his executioner and the naked blade behind him as though they were before his eyes.

"How long now?" asked Fluke suddenly.

Caleb lifted his eyes to the dashboard, his attention lingering for a moment on the steady green light before moving on to the chronometer.

"An hour and a half . . . " he murmured.

Fluke stared out at the harsh brilliance and shadow of the terrain around the hurtling car. "This will do. Cut the motors." He moved tensely. "I don't want to run into that engineering party."

"They'll have built up the pillars hours ago," said Caleb. "They can't work in the sunlight, even when it's at an angle like this." But he closed the throttle all the way.

The speedo needle began to creep slowly back around its dial. Caleb watch it. When, he wondered, would Fluke choose to strike?

There was, he supposed, still time to attempt to turn the tables on Fluke. But all urge at self-preservation had left him. The weight of the long years of his exile seemed to increase the fatigue he always felt towards the end of such a ride as this.

He waited . . . watching the moving needle . . .

And then, quite suddenly, the green glow vanished in a flickering amber. Fluke sucked in his breath.

"What — "

The car jolted with suddenly applied brakes, and the lights went as Caleb was flung forward by his own momentum.

For a moment he thought he was dead. Then he heard Fluke's snarl—like that of a thwarted animal—and the knife blade slashing and hacking.

"Stop it!" shouted Caleb. "Stop it, you fool!" He staggered to his feet, leaning against the braking action, gripping the back of the seat.

"Oh!" he gasped as the knife entered his shoulder like a burning brand. "Madman! Stop it! The car's stopping because — Oh!" — another stab of the unseen blade — "Because the rail's breeched ahead!"

He slumped down on to the seat, blood trickling warm from his wounds.

Above him a lighter flared. The emergency lights came on. Fluke glared down suspiciously. "You say the rail's breeched?"

Caleb nodded, holding his shoulder, looking up into the young, vengeful face above him. "And it was true what I said about the engineers going back." He pointed weakly at the dark screens on the side of the car. "Within five hours those'll be red hot." He smiled. "About that time the welding of the car will give way. Ironical, isn't it?"

Fluke's widening eyes glared at him. "What do we do?"

Caleb leaned his head back. The face above him hazed and the long cabin seemed to spin with the vertigo of his weakness.

Hands tore at his clothing. He tried to push them away. What was the use? Then evrything went black . . .

When he came to, his shoulder felt stiff and sore and weighted down with wadding stuff. Bandages. He lifted himself with difficulty, pausing as the sickness came back, and then hooking his good arm over the ripped back of the seat.

Fluke was at the radio. He'd got it rigged to the emer-

gency batteries and had his ear to the crackling speaker.

"We're six or seven hundred miles from the dome," said Caleb. "The curvature of Mercury's surface hides us from anyone even if we had power enough to radiate that far."

Fluke, resting blood-streaked hands on the radio housing, lifted his white face. "What else can we do? We've got to try. I've run the car right up to the gap." He pointed. "If only they could hear us."

Caleb sighed. "How far did you move the car?"

"Seemed a long way. Perhaps twenty miles. Why?"

"Twenty miles." Caleb felt for his pipe. It was the first time he had felt like smoking since starting back. "That's it, then. The batteries are good for only about thirty miles. We can't go back to the other dome now."

He turned himself to face the front of the car. The Sun had grown behind the dark shades to a glaring, electric semicircle. "Even if they did hear us, they'd be too late." He struggled with the loading of the worn bowl, finally managed it, stuck the stem between his teeth and held the lighter.

Through the wreathing smoke he stared out at the jagged break in the line and at the craters freshly torn in the brown rock and brown dust. Crater overlapping crater. Quite small things, really, by the standards of the macrocosm, scars soon to be healed, weathered by extremes of heat and cold, filled in with dust.

He took his pipe from his mouth and leaned forward. Yes, the Mercurians had come to watch. In this harsh landscape of shadows one did not notice them at once. Had they, he wondered, had they heard Fluke's desperate call for help? Could they understand the danger that threatened two beings as alien to them as they were to the Earthfolk?

But, even if they did know, how could they communicate their knowledge, even should they wish to do so, to the other humans?

He turned as Fluke sank down on the seat beside him. "D'you see them?" he asked.

Fluke started and stared over the gap along the gleaming line. "No?" he gasped excitedly.

Caleb grimaced. "No, not the other car." He pointed with the pipe stem. "The Mercurians. Watching us."

"Damn them!" said Fluke miserably. He looked at the rising Sun.

Caleb smoked steadily. If the Mercurians had somehow warned the dome of the plight of the car, the engineers' car would be showing up any moment. There was just time for an emergency repair to the line and for towing them out of the dead sections of track . . .

"Listen!" he warned suddenly as Fluke moved uneasily.

Through the crackle of static in the receiver he thought he could hear a faint voice. Yes . . .

Yes!

It was Sergeant Tranke.

"Hello, Caleb! Hello Caleb!"

"Fluke!" Confound you!" barked Caleb. "Get back on that radio. Get back on it, man."

He sat, waiting, wondering at the miracle of Tranke's arrival, while Fluke gasped the details of their predicament.

"Coming," said Tranke. "I had no idea you were so far off when we started out. That's Signalman Fleet, isn't it? Tell me: how did you get a radio signal to carry your voice so far—and over the curvature of the surface, too?"

Caleb took the pipe from his mouth. "Got it!" Here was one phenomenon of Mercury that he would be able to explain away to the C.O. The Mercurians might not be able to originate messages in the alien language and equally alien thoughts of the Earthmen. But they had caught the urgency of the appeal—after all they had been listening in to Earthmen talking over the radio for ten years—And they had acted as booster stations, passing the radio modulations from one to another, all the way to the dome . . .

He turned excitedly.

But Signalman Fleet was in no condition to understand how it had happened just yet . . . Caleb stared understandingly at the bowed head and shaking shoulders.

Fluke—or Fleet—was crying.

After all he was very young. He still had to learn how to ride the twilight rail.

THE END.

It was a magnificent feeling to be the first man to land on the Moon, but the human element was the one unpredictable factor not allowed for in the computations.

THE HUMAN ELEMENT

By Lan Wright

Illustrated by CLOTHIER

He sat on a rock in the middle of a large flat plain ringed with fantastic peaks. It was a rock that no man had ever seen before, and the plain had only been seen by man through his telescopes.

The sky above him was the blackness of space wherein the stars flickered with unaccustomed brightness, and the hazy blue globe of Earth spun in majestic splendour.

The plain was known as Copernicus, the rock was volcanic lava, and the man was named Langan.

He sat in his space suit and watched a moving spark of light grow dim and small as it lost itself in the blackness, and twin tears trickled down his youthful cheeks, tears which he could not wipe away because of his suit. His eyes were wet and sombre, they were the eyes of a man who was looking at death, and they were all the more pitiful because they were a young man's eyes. Langan was twenty-six.

How long ago had it started? Eight years, when he had left college with honour degrees in maths and physics? Five years, when he had joined Project Moon? A year, when he had been chosen to pilot the first man-carrying rocket ship to the Moon? Or thirty-six hours when he had fastened the safety straps which held him to his couch, and vomited

violently as the nil gravity of the speeding ship upset his reactions?

Thirty-six hours! A lifetime of excitement, anticipation, discovery, horror, and now now—death. In that time he had spanned the life and experience of a man three times his age, he had risen to the heights and plumbed the depths, and now

it was over.

Langan looked at the watch strapped to the wrist band on his suit, and he had to blink away the tears from his eyes to make out the time—seventeen hundred Greenwich Mean Time.

The ship turned slowly under the push of the starboard guide jets but Langan was equal to the task and fifteen minutes of careful manoeuvring had the stern of the vessel pointing at the Moon in preparation for landing. In ten minutes he could start the landing blasts.

He pulled the log book away from the bulkhead on its retractable arm and wrote his periodic report swiftly in shorthand, at the same time dictating what he was writing so that the hidden recorders could duplicate his written words. The job finished he strapped himself into his berth and fumbled with one hand over the firing board to make sure the keys were in order.

He switched on the stern televiewer so that the rapidly approaching surface of the satellite showed clearly before his eyes as he lay there. He turned to look at the altimeter and the speed indicator and his brain worked quickly to co-ordinate the figures while his hands were busy with the slide rule which was the certain and infallible check on his mental gymnastics. He was correct, and he frowned slightly at the result, his hands moving quickly and surely over the firing keys. The pressure of the blasts pushed him deep into the soft, plastic foam of his couch as the thunder of the jets took hold and slowed the plunging flight of the ship.

The speed of fall decreased quickly and he breathed an unconscious sigh of relief. The phrase "human error" floated through his mind and he grinned slightly as he recalled the phrase and thought how often it had been drummed into him during his preparatory training.

"The most dangerous single factor of the trip may well prove to be uncontrollable human error." That was what They had said, and They should know; not that any of Them had ever done the trip except on drawing boards and in laboratories. Nevertheless, They knew.

Langan blasted the jets again and the speed dropped still further. The surface of the Moon showed more clearly on the screen above his head and the altimeter was showing forty thousand feet; in ten minutes he would be safely down.

He took his fingers off the firing keys and the ship lurched

violently as he did so, but the dull roaring did not cease entirely. In sudden alarm his eyes flickered over the board, and a series of red lights told him that the starboard tubes were still firing evenly though his fingers were off the keys. On the screen the Moon view reeled wildly and vanished, giving place to the star strewn depths of space. Langan cursed luridly and punched hard at the keys to try and stop the flaming jets which were swinging him off course. Abruptly the roaring ceased but the Moon view was still not visible, and he cursed again, pushing the keys for the port tubes to turn the ship back to its proper position. He prayed hard that he would be in time.

And the flaming jets ate up the fuel.

Langan was sweating profusely by the time the surface of the satellite showed again on the screen, much nearer now, for the altimeter showed under five thousand feet.

He gave all the jets full power, his body sinking deeper into the plastic foam as the speed of fall dropped, and he nursed her down gently on golden columns of flame while his stomach reeled slightly under the impact of returning gravity and deceleration. He felt weak and sick from reaction and his heart jerked nervously every time he had to use the faulty starboard tubes for fear that they would jam again, for such an occurrence at that stage would be fatal to him and to the ship. But he landed safely, coming down neatly and perfectly in the centre of Copernicus and within a mile of his projected destination, which was good reckoning after a quarter of a million miles through territory where no man had ever been and under conditions which were only known as theories in the laboratories.

He breathed deeply as the roar of the landing auxiliaries died away and was replaced by deep, utter silence. The ship that had lived and pulsated around him for thirty-six hours was dormant now until the time when he should call upon it to carry him back towards the blue globe that floated hugely in the heavens above him.

He got up from the couch, tugging impatiently at the straps which held him as he felt the excitement of fulfilment rising inside him. The hardest part of his mission was over, the Moon landing was an accomplished fact and he was the one who had accomplished it. His excitement mounted as he swung his legs to the floor and crossed to the locker which

held his space suit. He pulled it out and climbed into it, methodically checking the joints and valves as he did so, then he passed into the air lock and closed the inner door behind him.

Two minutes later he became the first man to stand on the surface of another world. It would look well in the history books he thought—"A twenty-six-year-old redhead named Mark Langan, weighing one hundred and thirty-two pounds, five feet five inches tall, was mankind's first ambassador to the stars." Or something like that anyway. He stooped awkwardly and picked up a mitt full of fine white dust, letting it slide through the flexible fingers of his suit. He smiled wryly as he watched it, queer, unimagined emotions chased through his being and surprised him, for he prided himself on being more than averagely unemotional, except for Karen—the smile slipped from his face as he pushed the thought roughly out of his mind; he pushed the button at the side of his headpiece which activated the microphone set in the helmet above his eyes.

Self-consciously he began to recite the formula which he had been given to learn back on Earth.

"I, Mark Langan, do now and forever announce and proclaim to all whom it may concern, that I have this day taken possession . . . . " and in the ship an automatic recorder noted his words with cold, metallic disinterest . . . . "stated this day, January twenty-first, in the year one thousand nine hundred and sixty-four, at seventeen thirty Greenwich Mean Time."

As he finished and switched off the mike he blushed a trifle self-consciously as the pompous ring of the words echoed in his mind. His children's children would hear those words far off in the glorious future he was helping to shape, and perhaps they would be proud of him. His children—if Karen was willing. Karen with her dark hair and darker eyes, her red lips and yielding body. Karen—

He shook himself angrily and pushed the thoughts viciously aside, he had a lot to do and not a great deal of time to do it in. He went back into the tiny control room and stowed the suit away in its locker. Now that his first exit from the ship had been made he turned to make the routine check of the ship and the instruments which his flight schedule demanded.

Langan was humming softly to himself when he began the

fuel check, but the humming stopped abruptly as he read the message of the gauges. His lips pursed and his brow crinkled with sudden worry, while in the pit of his stomach he felt the first rumblings of panic. He checked again hurriedly with the same result. The sweat of terror beaded his forehead as he stretched a trembling hand for the slide rule and this time the check was irrefutable, for he knew, all too well, his skill with the gleaming metal and plastic instrument which told him with cold indifference that he was short in fuel by nearly two hundred and fifty pounds Moon weight, over-half a ton by Earth measurements.

The effect of that frantic five minutes during landing was shattering, and he cursed himself for not having thought of it earlier, he knew full well that the cause and effect had been lost in the excitement of the landing. Well, now he knew. He sat weak and sick on the edge of the couch, his brain reeling on the edge of hysteria and panic. A faint whimper broke from his ashen lips, a whimper which was stifled instantly by self loathing as he fought for self control and found it in the thought that he was a man on the threshold of immortality—one way or another.

More calmly now he sat and tried to evaluate his position. True, it was serious, calamitous even but not fatal, for the mere fact that there was a fuel shortage could be countered by disposing of all excess weight within the body of the ship. There were the partly emptied fuel tanks if he could transfer the fuel from some of them to others. It would mean doing without two or four jets but the weight of the discarded tanks would be considerable and worth the effort. If he had time—

Time! A new panic took hold of him; such an operation would take hours, maybe days, for the tanks were heavy and would have to be taken out in pieces, and they were not easily accessible. All he had was a bare margin of twelve hours before he would be forced to take off in imminent danger of his oxygen supply giving out before he got back to Earth. His limit allowed him fourteen hours oxygen out, fourteen hours back and a maximum of twelve for his stay. At that it would be cutting things fine and he would in all probability land with less than one hour's supply in his tanks.

He bit his lips savagely and unconsciously as he realised that he could only jettison movable or easily dismantled parts, including the valuable recording equipment and data of the

trip which woud be vital to scientists back home. His hopes rose again, after all records like that could be obtained on the next trip for if he returned safely there would certainly be a next trip and another after that. They could get all the records they wanted later on.

Langan spent three hours piling movable equipment, tools, records and other easily shifted objects outside on the dusty plain, and before he was halfway through he realised with dismay that his exertions were causing him to use up more oxygen than had been allowed in the calculations of his needs. The three hours' work had not resulted in the removal of two hundred and fifty pounds of material or anything like that amount, and he looked in dismay at the pile which, on Earth would have weighed six or seven hundredweights but which on the Moon only reached one sixth of that amount.

He sat in the control room and ate a frugal meal of vitamin tablets and water while he thought dully about the hopelessness of his position. Long since the nagging thought had come to him that the records were more important than he had at first credited them with being. There had been strong rumours months ago that another Power, too, were about to launch a Moon rocket, the rumours must have had some basis in fact because work on their own ship had been speeded up. The failure of his ship to take back valuable data would mean the loss of months, years of time for they were basing the future on the success of his mission. He could not afford to fail.

If the rival ship got to the Moon and returned safely the vital lead they had gained would be lost, and the politicians had warned them of the dire dangers which might arise if such a position became fact. The politicians—he sneered to himself in futile disgust and gulped down the remains of his ration of water.

He thought suddenly that he could tear out the metal sheets which lined the inside of the control room, they were bolted down but he had tools to do the work and it might not take long. Such an act might upset the balance of the ship though, and that would be as dangerous as trying to make the trip on too little fuel, for any advantage he gained that way would be lost in the wild manoeuvring he would probably be forced to carry out to correct the trim of the vessel during take-off and landing.

He felt suddenly tired and dispirited but he pulled on his suit again and went outside to look at the great blue globe of the Earth high above him. For the first time he felt a touch of nostalgia and home sickness, a choaking lump in his throat at the distance he was from home in space, and how short a distance in time. Karen was twelve hours and infinity away, an infinity that could be bridged by two hundredweights of senseless material. The futility of it all overpowered him and for a minute he wept uncontrolably inside his suit until revulsion at his lack of control came again to his rescue.

Back in the control room he sat and tried to puzzle a way out of his predicament, and while he sat, tiredness overpowered him so that he slept without knowing it. And in a locker stood a phial of tablets which were meant to keep him awake for the whole of the voyage; they lay unremembered under the stress of more urgent problems.

The scientists had realised that a man on his own on such a trip could not sleep for fear that his slow awakening, should trouble arise, might cost him that hairline between success and failure which was so vital. They invented a drug which, if taken regularly, would keep a man awake and alert for a week.

But Langan slept and dreamed. He dreamed of Karen and of his home and parents so that he smiled in his sleep, and he dreamed of other things, unmentionable horrors which rose up in his mind and tormented him so that he moved and groaned, and finally screamed. It was the scream that wakened him.

He sat up on the couch sweating, wild eyed and trembling from the nightmare, and it was some moments before remembrance came to him. When it did he cursed at the knowledge of what he had done and turned horrified to the chronometer on the wall. It was six twenty and he had slept for nine hours.

The oxygen gauges told him that he had another fourteen and a half hours to breathe, and he had not yet started to solve that problem. Even if he could leave now—

There are moments in men's lives when even the bravest of them give way to their emotions, but when that moment is past they usually see with greater clarity the road which lies before them. So it was with Langan.

As he regained control of himself he could see with unshakeable calmness and resolution exactly what he had to do. Quietly and methodically he began to estimate the weight that would be saved by removing the couch, the oxygen cylinders,

the space suit, the medicine chest, the water—and himself. These items added to sundry other instruments and tools which would be useless unless he was aboard brought the total weight saved up to nearly three hundred pounds, and the records could go back. There would be a very small margin even at that figure but it would be sufficient for the plan he had in mind.

Time was of no importance now, for as long as he got the ship away before his oxygen supply gave out he would have time enough and more. Calmly now that his fate was decided for him he sat in the control room and plotted the course and time, the margin for error and the percentage chance of success. The latter was not as high as he would have wished but it was on the right side, somewhere in the region of three to one in favour.

Langan figured for four hours before he was positive that he was correct to within one per cent., and he only stopped at that inaccuracy because he had so much to do. It was not enough that the ship should get back safely, he had been sent out with a job to do and that job was to gather as much information as he could. He spent five hours more recording and storing everything he could find about the ship and the flight, and the Moon and its make up: he told about the faulty wiring in the starboard tubes which had lead to his downfall, and he recommended, dispassionately, that radio waves be used to fire the rockets instead of direct wire transmission. He made other suggestions which he knew would be helpful in the building of future ships, and he recorded his considered opinion that a Moon base could very easily be erected at once by the use of two-man rockets in fleets.

Finally, he recorded a farewell message to his parents; he told them not to worry for he was proud of what he was doing and he knew that it was right. He thanked them humbly for all they had done for him and he asked them to be kind to Karen and look after her, because they had had him for over twenty years, and she had only a handful of days and moonlit nights for her memories.

His last message was for Karen and it was made of those things which only lovers know and treasure, and for that reason it should not be recorded. It was wild and tender, ridiculous and true, it came from the heart and mind of a man who had death tapping at his shoulder. It was a love letter

such as the world had never known. Langan himself would have laughed ironically if he had known that the General in Command of the board which investigated his recordings was moved to tears by the message for Karen. Yet, after all, it was no laughing matter.

These duties finished, Langan made the actual preparations within the ship. He unloaded all the spare equipment and then set about the task of wiring the automatic parachute release to the wall chronometer. It was a ticklish job for he was not that sort of technician but he accomplished it at last and knew with a reasonable degree of certainty that the emergency parachute at the top of the control room would open successfully in time to land the vital rocket head safely on Earth. This, he thought grimly, was one ship that would not land under its own power. He could not be so certain of the place on which it would land, but by timing the take off and correlating other data he could at least be sure that it would come down in the right hemisphere and that was all that mattered.

His final job was the wiring of the control board to a faked up remote control unit made from a switch and a flashlight battery. He had to strip out some of the lighting circuits to obtain enough wire, and he arranged it so that the initial spark would jam the board and keep the rockets firing for as long as there was fuel to feed them, for once the ship was clear of the Moon's gravity it would have no need of fuel. He aimed to set in a spiral orbit around the Earth to decrease speed and he timed the parachute release to coincide with the passing of a thirty-three to one shot, and he'd never brought off one of the figures told, but thinking about it made it seem more like the ship over the western hemisphere. A three to one chance those even in a five horse race.

He had estimated the firing time at sixteen fifty six and nine seconds, and he made his final check at sixteen thirty. On Earth it would be late afternoon, and winter; there would be snow on the ground and the air would be crisp and good to breathe, not tinned and metallic like that now in his lungs. He clenched his teeth and forced the thoughts from his mind, they could do him no good now.

The final twenty minutes seemed like twenty years even though he tried to fill them in by making sure that all the records were safely stored, and at sixteen fifty he brought the two wires out from the firing board, through the airlock and

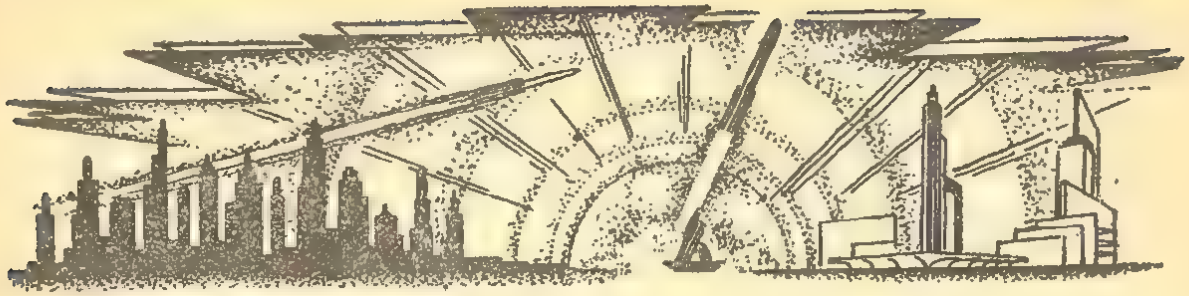
across the plain to the shelter of a small group of rocks. He went back and took a last look round the tiny control room which had been his home for nearly two days, and then he went out again, closing the outer door of the lock carefully behind him so that it did not cut the two wires. He pulled the metal ladder down after him and at sixteen fifty five exactly he settled down behind the rocks to count off the remaining seconds.

Langan's voice echoed dully in the helmet as he called the last ten seconds aloud, then he pressed the gleaming black switch which was to sever his life as neatly as any electric chair. For a moment he thought that something had gone wrong, there was no sound, no movement, nothing, then suddenly the ground began to shake under him and a blinding glare flooded the rocks about him and blinded his eyes so that he screwed them up in their sockets, forcing tears from under the wrinkled lids.

And then it was over, the rumble died, the light flickered and was gone. He lifted his head and through watering eyes made out the bright gleaming speck already far above him. He got up from behind the rocks and stood for a long minute looking upward, his head lifted and his eyes on the heavens; he was man and he had conquered. Slowly he sat down upon one of the smaller rocks and a great feeling of loneliness came over him, there was no sound except his own breathing, and there was nothing familiar for him to look at except a small black switch and two lengths of broken, blackened wire. Across the plain, near the spot where the ship had stood, a strange, flat, glistening surface showed where the metal he removed from the vessel had melted in the blasts of the jets and frozen again instantly in the airless space. Even those useless things had gone from him.

He lifted his head again, and there was the tiny spark high up in the heavens, a spark which carried his life—and the future of all mankind. He thought again of Karen, and for a short while he found time for tears, but it was not for long.

THE END.



At last a ray of hope appears for the destitute Martian colony—a plant that will grow in the desert. But to get recognition they had to threaten Earth itself!

PISTOL POINT

By E. C. Tubb

Illustrated by QUINN

He rested in a shallow grave scooped from the fine, red dust, a small man with pipestem limbs and shrunken cheeks. His naked body seemed almost childish, the skin deathly white and with a rough appearance. His stomach was swollen and the bones of his ribs strained against the skin of his chest.

They had taken away his uniform, the thick underwear, the insignia of rank. They had closed his eyes and folded his arms, yet they could not soften the harsh lines time had graven into his features. He rested — facing them for the last time, not feeling the dust scouring his body.

Ventor was dead.

They stood; a score of them, masked against the swirling plumes of dust, and paid their last homage. A voice, muffled by the metal and fabric of an enveloping mask, droned the words of an ancient ritual. Dust spattered on the body, hiding it for ever.

It was over.

Carl Denton stared through the scratched plastic before his

eyes, drew a deep breath through the filters, and turned away. Behind him dust swirled in a twisting cloud, hiding the few men labouring with shovels. He shivered a little as the biting dawn wind penetrated his coverall, angrily he kicked at the dust.

"Anything wrong, Carl?

"What?" He stared at the short man who had fallen into step beside him. "Nothing wrong, Pop. It's just that Ventor's gone, and I hated to see him go."

"I know, Carl. One by one all the old 'uns are going. I'll be next."

"You?" Carl chuckled fondly. "You won't die, Pop. You're as much of a fixture as the dust, you've always been here, you always will."

"Maybe," the old man said dubiously. "I've been lucky, but I'm getting old. I remember the early days, when the women were here and the mine was going full blast. I remember Ventor coming, and I remember you. I can't last much longer."

For a while they walked in silence, the dust rising in soft plumes from their feet. Above, the stars dimmed as the small red ball of the sun climbed above the horizon, the early morning wind grew stronger.

"What will you do now, Carl?"

"Do? How do you mean?"

"Ventor's dead, you were his second in command."

"Not for long. Earth will replace, Ventor. I'm not suitable." Carl sounded bitter.

"Because you were one of the bad boys sent here to serve his time?" Pop chuckled. "You're more fitted for the job than anyone else. What do those fat slugs back home know about conditions here?"

"Who cares?" Carl asked cynically. "It's a job for some ex-officer anyway."

Before them the rounded domes of the colony rose above the horizon. A huddle of adobe shelters, the windowless walls scoured to a faint polish by the action of wind and dust. The bright dome of the food plant reared above the rest; the whole connected by an interlaced network of power cables.

Carl halted, staring at the familiar scene with new interest. Far to one side he could see the abandoned machinery of the mine, a huddle of mechanisms designed to extract the easily fissionable element present in the dust. Cables snaked from

both mine and settlement to a point far over the horizon; to where the atomic pile generated the current which was the life force of the colony. He had seen it all a thousand times before, but this time it was different, this time he was in full charge of the lives and welfare of over seventy-five men, and equipment the cost of which ran into millions.

A spark blossomed high overhead. A spark which grew, lengthened into a pencil of flame, a flame supporting a mass of gleaming metal. From the settlement a siren whined into strident life, sending a thin high wail echoing over the desert. Men spilled from the buildings, racing towards the pitted area of the landing field.

Carl instinctively began running, his boots churning the dust. Pop caught him by the arm.

"Wait for me, Carl. Wait for me." He chuckled, the chuckle turning into a violent fit of coughing. Carl stood helplessly by as the old man doubled up, harsh sounds coming from beneath the mask. When he finally straightened, little red flecks stained the scratched plastic.

"Feel better?"

"Yes," gasped the old man. Impatiently he shrugged off Carl's hand. "Let's go and see what they've brought us."

Together they strode across the shifting dust of Mars.

The pilot was short, slight, and almost insufferably cocky. He swaggered into the administration building, stripped off his mask, and flung a packet of onion skin papers onto the desk.

"Here's your mail and loading manifest." He stared at Carl. "Where's Ventor?"

"Dead, snapped Carl ripping open the package. He threw a bundle towards Pop. "Mail. See that it's distributed will you, Pop?"

"Sure," agreed the old man. He scratched at the fuzz of beard he wore, and squinted at the pilot. "Have a good trip?"

"Nothing to it." The little man sounded bored. "Do one and you've done 'em all."

Pop grunted: "Where's Dillworth?"

"He's scheduled for the next run. They had to pull in his ship for overhaul, the tubes showed signs of pitting. You'll be seeing him in about six months."

"Six months!" Carl looked hard at the pilot. "Get that mail distributed will you, Pop." He waited until the old man had left the room. "What's the idea? I thought that we were on a three month schedule?"

"Not any more you're not." The pilot flopped down into a chair, and stared around the bare office. "Aren't you going to offer me a drink?"

"Sorry," grunted Carl. "Here." He took a bottle and glasses from a drawer, poured an almost colourless liquid and pushed

one of the full glasses towards the pilot.

"Thanks." The little man sipped, swallowed, and pulled a wry face. "One thing about living on yeast," he commented drily. "The by-product has its uses. This must be pure alcohol."

"Almost," Carl agreed absently. He studied the loading manifest, a frown on his still young features. "Is this all you've brought?"

"It's as you see it. Sugar. Medical supplies. Armoured cable. Assorted spores, and some other junk. Why?"

"No men?"

"No."

"I see. How long is your stop-over?"

"The usual. Three days." The pilot stood up from his chair. "Sorry to hear about Ventor. I suppose that they'll replace him as soon as they can, who's in command now?"

"I am."

"See that the mail and official reports are ready in good time, won't you. I want to blast as soon as possible." He hesitated. "I'll go and supervise the unloading, my co-pilot expects me back. See you tonight?"

"Yes."

The pilot lifted a hand, and left the office.

Pop sidled through the door. "What did they bring us, Carl?"

"Bring us?" Carl snorted pushing the papers across the desk. "The usual basics. No experimental equipment. No men. Nothing that we ordered." He began to stride irritably about the room. "What are they playing at, Pop? The pilot tells me that we have been put on a six-month schedule, it means half supplies and no chance to do anything but barely exist. I wanted to start hydroponic farming. I wanted to fuse the dust around the settlement. I wanted humus and chemicals, earthworms and bacteria cultures. I wanted to grow something on the dust. Ventor wanted it too. We've all wanted it ever since the colony was founded, why don't they help us?"

The old man didn't answer. He stepped across to the desk, poured himself a full glass of the almost neat spirit, drank, wiped his bearded lips, and broke into a fit of coughing. Carl watched him with mingled impatience and pity.

"You should know better than that, Pop."

"What's the difference?" The old man with his boyish figure, shrugged, refilled the glass, and sat on the edge of the desk.

"Look, Carl. I've been here a long time, and I've seen the same old things happen time and time again. We get a new commander. He's full of wonderful new ideas—except that they aren't new. He wants to do the obvious. Why do you think it's never been done?"

Carl shrugged, staring around the bare brown walls of the office. The single tube-light in the ceiling flickered, dimmed, then burned steadily once more. He frowned at the obvious signs of wear.

"I don't know, Pop," he said tiredly.

"It's not through lack of trying. Some of the early commanders worked miracles, but you can't build without bricks. We have never had the right tools to do the job. Once, when the mine was working and the women were here it seemed that we had a chance. You know what happened then."

"I know. The women had to go back, the men wouldn't stay without them. The atom war came, and Earth had had enough of atomics." Carl moved restlessly about the tiny office. "That doesn't answer my question, Pop."

"I know. I can't answer it, there's only one man who can."

"Lasser?"

"Yes. He's the head of the Department of Extra-Planetary Affairs. Now that we've won the atom war, the international situation no longer exists. He has no excuse for ignoring us, but he does."

"Why, Pop? Why?"

The old man lifted his glass, squinting at the clear liquid.

"We're just not wanted," he said calmly.

Outside a siren began to howl.

Carl grabbed his mask and ran out of the room. Impatiently he operated the double doors, and with mask still half adjusted, ran into the narrow lane which served as the main street. Dust clogged it, in some places almost knee high, and he cursed as he felt its drag slow him down.

A man stood before the food plant. He held a plastic container in one hand, and gestured with the other. Men milled about him, the sound of their excited voices filling the thin air with a muffled drone.

"What is it?" snapped Carl, shouldering his way towards

the man. "Who operated the siren?"

"I did," gasped the man. He was bare headed, his thin cheeks flushed, his eyes glistening. "Look!"

"Never mind that now." Carl grabbed his arm and spun him towards the building. "Get back inside before the dust rots your lungs. The rest of you get back to work, I want that rocket unloaded before dark. Move!"

Within the warm humidity of the food plant, Carl stripped off his mask and turned to the gaunt faced man.

"You're Fenson, aren't you?"

"Yes. I've been working on food cultures." He smiled, his thin features almost glowing with triumph. "Look!"

Carl looked at him, then bent and peered at the plastic container. It was an ordinary gallon jar with a wide screw top, one of the many used to pack fresh yeast cultures. It was half filled with the red dust covering the planet. Carl peered closer.

"Is this the result of a laboratory experiment?"

"No. I used ordinary dust from the truck garden. I put it within the container to shield it from the wind, and to keep control." Fenson's voice rose with excitement. "I've done it, Carl. I've done it!"

"Done what?" Pop came into the room stripping off his mask, curiously he stared at the jar, then bent, his bearded face intent.

Something grew within the container.

Tiny fronds of delicate growth; dry looking and of a green so dark as to be brown. A strange growth, a cross between a moss and a lichen. It covered the surface of the dust with a thin fuzz almost an eighth of an inch high, brittle, fragile, yet still it grew where nothing had grown before.

Slowly Carl straightened, exhaling with a soft sighing sound. Have you run tests?"

"Yes." Fenson smiled drily. "We've been too near success too often for me to take anything for granted. It's a spore plant of course, I irradiated some they sent us from Venus, tried a combination of things, and was lucky. I thought that it could have been a fluke, but it wasn't." He smiled again caressing the container almost lovingly.

"You grew this in the truck garden?"

"Yes."

"Have you tried it on the untreated dust?"

"Not yet." Fenson looked his alarm. "You think it wouldn't

grow?"

"I don't know." Carl slumped into a chair, lines of fatigue marring his young features. "Remember that the truck garden has had all the surface radioactives removed. Remember, too, that we have fertilised it for years with the waste products of the settlement." He smiled at Fenson's expression. "Don't be disheartened," he encouraged. "You are still the first man to grow anything on Mars outside of a laboratory."

"What shall I do now?"

"Do?" Carl smiled and rose to his feet. "Prepare as many spores as you can, and scatter them on as large an area as possible. Even if they can't grow on untreated dust, yet they will be more than useful where they do."

He picked up his mask and moved towards the door. "I'm promoting you to chief planetary agronomist, Fenson, and when they begin issuing medals I'll see that you get a trunkful."

"Thanks," called Fenson, already at work setting up apparatus on a long bench. "If you don't mind I'd rather you called the new plant after me."

"That's easy," grunted Pop. "Fenweed. How's that?" He joined Carl at the door, mask in hand.

"Let me know what help you need," Carl said seriously. "I'll see that you get whatever you want, and Fenson — "

"Yes?"

"—Thank you. I think that you've saved the colony."

The door slammed on Fenson's protests.

Outside it was growing dark, the gleaming points of stars glimmering against the black velvet of the sky. Over the horizon the twin moons raced, casting fitful shadows on the ever shifting dust. Low in the sky a green tinted fleck shone steadily. Carl stood for a long time staring at it.

"Earth," said Pop.

"Yes," breathed Carl. His gloved hands clenched at his sides. "They could give us everything we want, and they send us nothing. We can't pay. They sent their criminals, the unwanted drifters from the ravaged cities. They sent the bare necessities of life, and expected us to build a new world. Once they wanted us; they wanted the power we could give them from the radioactive poison in our dust, and for a while the colony had hope. Then they found their Eldorado. Venus turned out to be a treasure house, rotten with minerals, lush

with fertile soil, and Mars was forgotten."

Pop stirred restlessly, his feet kicking the dust. "We know all that, Carl," he said gently. "What can we do?"

"I held up a man once," Carl said quietly. "I robbed him of all he had, they caught me, of course, and they sent me here. I could have gone back years ago, but I chose to stay. I don't regret it, but I learned a lesson then, a lesson I have never forgotten."

"What was that?"

"I learned the power a gun can give a man. I was young, small, thin and weak. The man I robbed was big and strong, but I had a gun and he gave me what I wanted."

"What of it? You haven't a gun now, and if you had who would you rob?"

Carl didn't answer, he was staring at the slender silhouette of the rocket ship, soaring from the landing field at the edge of town.

The name of the little pilot was Conroy, and he was rapidly becoming quite drunk.

"I can't recommend the meal," he said, reaching for the bottle, "but I'm not going to complain about the afters."

Pop grunted, scratching at his beard. Fenson looked down at his glass, then at Carl.

"We found that it was more efficient to drink the alcohol than store it," Carl explained quietly. "In any case it's the only comfort we have."

Conroy sniggered: "Not like the men on Venus, you should see some of those natives." He whistled, rolling his eyes.

"We get along." Carl poured more liquor. "I'm interested in your rocket ship," he said to Benson the co-pilot. Don't you find it hard to plot a course?"

"Not if we leave on strict schedule," the man explained. It's just a matter of aiming at the correct star sights, firing the tubes the correct amount, and then coasting the rest of the way."

"But what if you aim wrong?"

"You can always correct your course. Earth is a pretty big planet, and with the new engines we have plenty of spare fuel."

"I see," Carl said softly. "I suppose that in an emergency even I could operate the ship?"

"Probably," agreed Benson. "Providing that you left dead on time and that nothing went wrong. Landing would be

something else though."

"I'm not interested in landing." Carl poured more liquor from the bottle. "I think that we'll start the mining machinery again and build ourselves a rocket ship. How long would it take to commence operations, Pop?"

"Not long."

"Could you run it?"

"Of course I could. There isn't a thing on this planet I couldn't operate. Atomic pile, food plant, pumping station, anything. Why?"

"I want to blast off for Venus — something about those native women appeals to me." He joined in the general laugh.

The bottle kept circulating. After a while Fenson excused himself and hurried back to his work at the food plant. Conroy yelled a farewell after him, and winked at Carl.

"I hope that my remarks about the meal didn't offend him, but I hate yeast, never could see how you people managed to live on it. Did I tell you about that time on Venus when we went hunting?"

"No," said Carl encouragingly. He pushed the bottle closer to the pilots. "Talking is thirsty work, plenty more where that came from."

"Thanks. Well it was like this . . ."

Three long stories later, the alcohol finally took effect. Carl stared down at the two unconscious figures, lifted the empty bottle, smiled, and deliberately set it down again.

"Satisfied?"

"What do you mean?" Carl looked hard at the old man. "Is it a crime to offer a man a drink, Pop?"

"You deliberately got those two fellows drunk. Why?"

Carl didn't answer. He rose from his chair, took several long strides about the room, biting his lip, and clenching his hands. Finally he returned to his chair.

"How much does Mars mean to you, Pop?"

"What's on your mind, Carl?"

"What would you do to safeguard the colony? How far would you go? Would you lie for it? Steal for it? Beg for it? Would you kill?"

"I've been here twenty years, Carl."

"And I've been here over ten. I've grown up here. I was eighteen when I came, and in all that time things have grown worse. I know how Ventor pleaded with Earth to send sup-

plies. I know the sort of answers he got. He broke his heart trying to do the impossible, and I suppose that I could do the same." He looked steadily at the old man. "I have a better idea."

"What?"

"We're being ignored. Discounted. Cast to one side. Nothing could be worse than that. Once we're forgotten, we are as good as dead."

"What can we do about it?"

"We can stop begging, we can demand."

"I think I know what you mean," the old man said quietly. "Would it work?"

"Why not? We hold this ship here, load it with fissionable materials, and when the next ship comes, you return to Earth and tell them what will happen if we don't get what we want."

"No." Carl rose from his chair again. "I'm not intending to bluff. If they don't do as we ask, then I'll drive the ship smack into the centre of the spaceport and blow it to hell."

"But . . . ?"

"What can we lose? If they send a military force to punish us, what can they do? I'm the only responsible party, and I'd be dead."

Pop sat silent in his chair. Once he picked up a glass, looked at it, then set it down. He coughed, wiping his mouth with the back of his hand, he stared at the faint red smear.

"I agree on one condition."

"Condition? What are you talking about?"

"You go to Earth, I'll pilot the ship." He raised a hand at Carl's protest.

"I'm not being heroic, just sensible. I couldn't live on Earth, I'm too far gone. I've not been in the rotor for more than five years, and I couldn't stand the gravity." He looked at the back of his hand.

"I'm going to die soon, anyway," Pop said softly. "I've nothing to lose, and I've always wanted to go out in a blaze of glory."

Suddenly he began to cough.

It was strange to be back; to feel the tug of a gravity three times normal, to gulp at water soaked air, and to see blue skies again after the eternal black ones of Mars. His muscles ached, but he could stand the gravity, thanks to continuous usage of the great centrifuge back at the settlement. He smiled at the

pretty girl receptionist.

"Tell Lasser that I want to see him."

"Yes, sir." She looked curiously at him, still dressed as he was in the thick coverall and knee boots, standard equipment on Mars. "Whom shall I announce, sir?"

"Denton. Carl Denton—from Mars."

He leaned heavily against the edge of her desk, and forced himself to be calm. Wryly he wondered what Conroy would say when he recovered consciousness, and tried not to feel guilty about the cowardly blow from the rear. He shrugged, he was in no position to be squeamish.

The intercom hummed, and Carl became aware of the girl speaking to him.

"What?"

"I said will you enter, please. Mr. Lasser will see you now."

He flushed, and stammered an apology, then half angrily entered the ornate office of the man who was in almost sole charge of the destiny of Mars.

Lasser was a big man, broad of shoulder with a thick red neck and smooth cheeks. His short thick hair was white, his small eyes a light blue, he radiated an almost unconscious air of sheer arrogance. He smiled as Carl entered, extended a pudgy hand, and gestured towards a deep well-padded chair.

"Welcome home, Denton. How is Mars nowadays?"

Carl sank gratefully into the chair, resting his bones against the rentless tug of unaccustomed weight. Lasser riffled papers on the wide surface of his polished desk.

"Let me see now. You are the commander of the colony aren't you?"

"Yes."

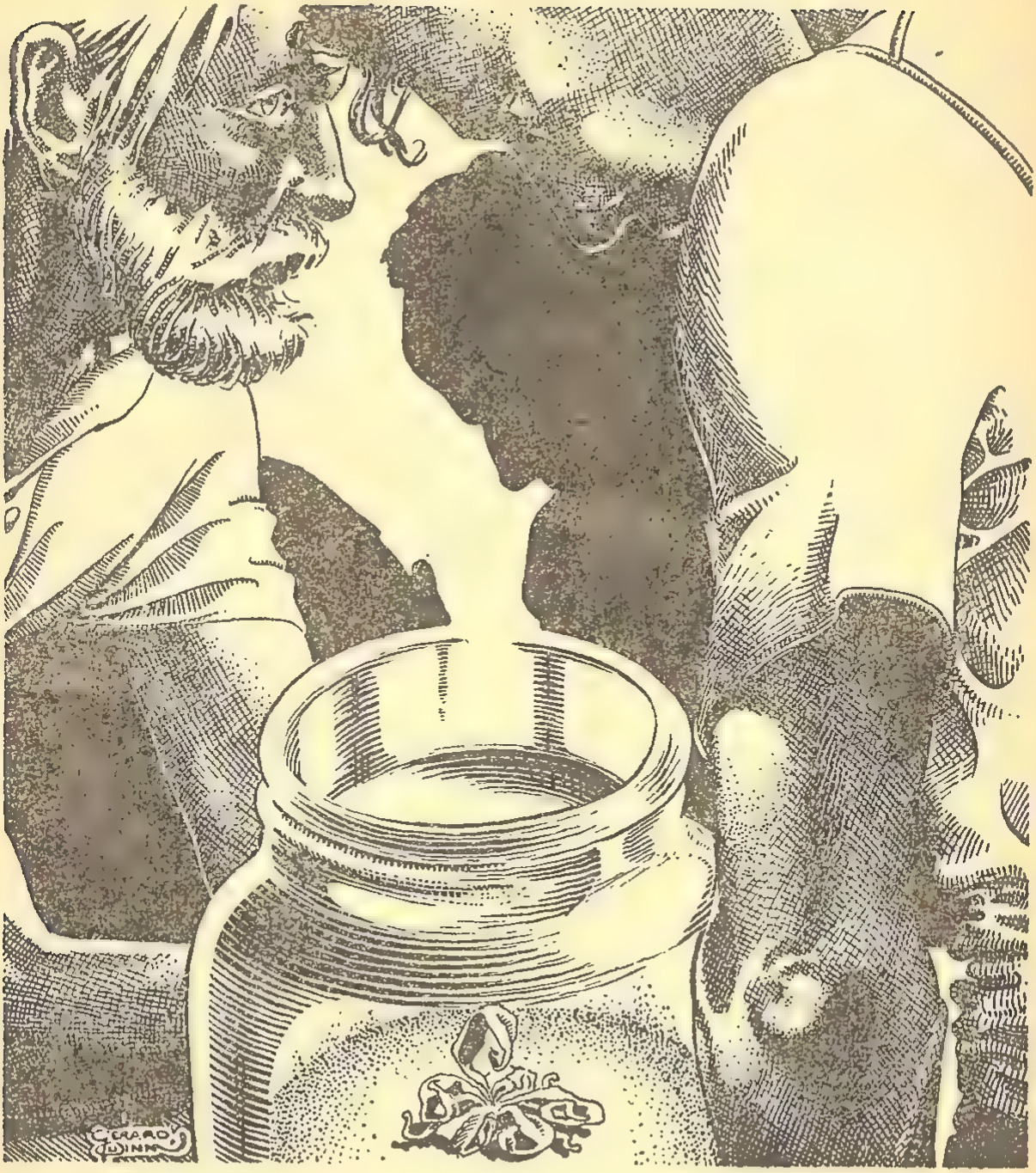
"Naturally. Otherwise you wouldn't be here." Lasser pushed the papers away from him, and leaned back. Light from the high windows behind him, streamed across the desk. From the nearby landing field sound hammered through the air as a rocket tested its venturis.

"You don't know much about Mars do you, Lasser?"

"I don't have to." The big man smiled. "I leave details to my subordinates. Why do you ask?"

"I suggest that you learn a little about the planet, it may save a lot of time. You know, of course, that the ship I returned with was six months overdue?"

"Was it? I didn't know that."



"Yes. Did you know that the commander's name was Ventor, not Denton."

"It's probably in the files." Lasser stirred impatiently. "Hadn't we better get down to business?"

"A good idea." Carl stretched, forcing himself to be calm. "Why did you cut the supply rocket down by half?"

"I couldn't help it, Denton. Venus needs every ship we can

spare. The settlers are clamouring for passage, the settlements need farming machinery, seeds, livestock, a thousand things. Each ship comes back loaded with minerals, specimens, things we desperately need here on Earth. What has Mars to offer against that?"

"Not much perhaps," agreed Carl. "I won't mention the lives of the people who live there, their hopes and dreams; the dreams of twenty years of continuous struggle to build a new world. That wouldn't be business. I'm here to state cold facts."

"Well?"

"We have managed to grow something on the dust. A small beginning perhaps, but we have been trying to do it for twenty years. When I left fenweed was growing on three square miles around the settlement."

"Good." Lasser smiled his congratulations. "That means you can do without food stores."

"We can't eat it," Carl explained patiently. "All we can hope for is that it will anchor the dust, enable us to work without masks. It is a start, but it isn't enough."

"But what do you want me to do?"

Carl leaned forward, desperately conscious of his race against time.

"I want you to help us. I want you to send us supplies, not the tiny amounts you have been sending, but more, far more. I want you to assign three ships to continuous Mars service."

"Three ships! Impossible!" Lasser snorted disgustedly. "Why man, think of the cost!"

"Cost!" Carl almost spat on the thick carpet with sheer disgust. "We don't want money. We want rubbish. Manure, the garbage from the sewers, the waste from the slaughterhouses. We want humus, organic matter for our farms. Chemicals, machinery, alloys, a new atomic pile. We can get everything we want from the dust — if we have the means of getting it, but waste organic matter we can't get — not until we can build a hydroponic farm."

"You're mad!" Lasser reached impatiently for a button. "Have you forgotten? Mars is a penal colony, the men there are criminals, most of them anyway. Why should I spend millions to help such as they?"

"Thank you for reminding me," Carl said quietly. "For a

while I had forgotten." He leaned across the wide desk kicking back the comfortable chair, and scattering the papers.

"You are going to help Mars, Lasser," he said grimly. "You are going to do as I begged — or else."

"Or else what?" Lasser asked contemptuously.

"Or else I'm going to blow your pretty little spaceport into dust."

In the sudden silence the hum of the intercom sounded strangely loud.

Noise came from the outer office; the muffled sounds of a man shouting, the subdued ones of a woman protesting, abruptly the door slammed open.

Conroy stood within the room, his uniform was rumpled, his eyes blazed with anger, from beneath his short hair, a thin trickle of blood ran down the side of his face. Two burly guards flanked him, their big hands gripping his shoulders, heavy pistols dragging at their belts.

"Who are you?" Lasser snapped.

"Conroy, the pilot of the ship he detained." He jerked his head at Carl. "Tell these muscle men to let go of me."

"Release him, and wait outside." Lasser waited until they were alone. "Now what is the trouble?"

"I'll tell you what is the trouble. This madman detained my ship for six months; until Dillworth landed. Then he forced me to bring him back. Benson, my co-pilot is still on Mars."

"So?" Lasser looked at Carl. "What is the meaning of this?"

"I know that, too," snapped Conroy savagely. "They've started the mine machinery working again, refining atomic elements from the dust. They intend loading Dillworth's ship with it, there's a crazy old coot who reckons he's a pilot, and they're going to dump the lot right in the middle of the spaceport."

"Is this true?" Lasser trembled with anger as he snapped the question.

"Not quite," Carl felt strangely calm. "We have refined a store of atomic explosive. We have loaded a ship with it, and we can pilot it to Earth. We could blow the spaceport to dust, and we will if necessary, but it depends on you."

"Me?"

"Yes. Help the colony, and you'll have nothing to fear. Refuse to help me . . . " Carl shrugged. "After all, what have

we to lose?"

"You'd never dare do it," breathed Lasser. "You just wouldn't dare."

"No?" Carl smiled. "How would you stop me?"

"It's rebellion, armed rebellion, you'll be shot for this." Lasser was almost beside himself with rage. "You think you can hold me up like that? To threaten an entire planet? You must be insane."

"You have a six month deadline," Carl said evenly. "If any ship lands on Mars without my being on it, then the ship will blast off. Once in space nothing can save the spaceport from utter destruction."

Surprisingly, Lasser chuckled. "You fool! You've overlooked one thing. No man in the colony could pilot a ship with such precision. Even if he could, what man would willingly commit suicide?"

"The pilot is an old man, dying of a disease of the lungs, and we aren't too concerned just where the ship does crash."

Sweat shone suddenly on Lasser's florid features. "You mean that you'd smash a ship loaded with atomic explosive onto a city?"

"We'd try not to, but if necessary we would." Carl sighed. "Listen, Lasser. We're not playing. You reminded me that I'm a criminal, well maybe I am, but if this is the only way I can get what I want, can you blame me for taking it? We face death on Mars, death through wanton neglect. I don't care what happens to me, but if I have to destroy a city to save the colony, then I'll do it, and do it gladly."

He slumped back into the chair, reaction sending little tremors running down legs and arms. Suddenly he wished it was all over, that he were back on Mars, out of all this emotional conflict. A hand touched his shoulder. Looking up he saw the two guards standing beside him.

"What is this?" he asked Lasser.

"You're under arrest for illegal entry, mutiny, and for unauthorised acts against the Department of Extra-Planetary Affairs," snapped Lasser. "While in custody your story will be checked for veracity."

"Don't be a fool, Lasser! Remember the time limit!"

The guards dragged him away.

Pain flooded him; the pain of wrenched muscles, of aching bones, and the dull numbness of sheer despair. He had lost

all track of time. Men had examined him; his head still throbbed with the impact of electrical forces from strange instruments, and the questioning had been endless. Now, it seemed for the first time in years, he was alone. A click came from the barred door of his cell, dully he glanced towards it.

A girl entered the bare concrete of his prison. A strange girl, somehow oddly proportioned, with mystical grey eyes, and a shimmering wealth of fine blonde hair. She smiled at him, and held out her hand.

"Hello. My name is Marvin, Phobos Marvin. I want to talk to you."

"Phobos?" Carl frowned at the familiar sound. "You have an odd name, what do you want?"

"To talk, that's all."

"How did you get in here?"

She smiled again and settled herself primly on the edge of his bunk.

"Does that matter? News of your arrival has leaked out, some think that the receptionist listened to your talk with Lasser. You are a very important man. Is it true?"

"Is what true?" Carl asked tiredly.

"About the ship you have on Mars."

"Yes."

"Good." Impulsively she gripped his hand, the contact sending a strangely disturbing thrill racing through him. Startled, he looked at her.

"Why do you ask?"

"Doesn't my name mean anything to you," she asked softly.

"Your name?" He frowned. "I don't think I know anyone named Marvin." Understanding came to him. "Of course! Phobos, you must be a Marschild."

"Yes. I was born on Mars, my mother was one of the very first women to volunteer for the colony. I was five when we were evacuated."

"I see," he nodded. "And your mother?"

"She died. They all died, those poor women who had hoped for so much. The radiologists did what they could, but it wasn't enough. All the children were put in an orphanage, the same one far out in the country." She smiled wryly. "Our isolated position saved us during the atomic war."

"And now?"

"Now you are our only hope."

Carl looked at her, startled by the savage intensity of her low tones.

"Don't you see," she continued. "I want to go home. We all do. We were born on Mars, and it has left its mark. We are different, how I can't pretend to know, but we are restless, unsatisfied, and unhappy. Will you help us?"

"I?" Carl shook his head in bewilderment. "What can I do?"

"You can force Lasser to ship us to Mars."

Carl sighed and slowly shook his head. "Even if I could, I wouldn't. Have you forgotten your mother? Have you forgotten what killed her? The radiations are still present on Mars, radiations lethal to any woman. You are asking me to take you to your death."

"No. I lived for five years on Mars, and I didn't die. There are other women like me, none of us have died. Don't you see? We are a mutation, a slight deviation from the norm, but immune to what killed our mothers."

Carl stared at her, shaken by the feeling in her soft voice.

"How can you be sure?"

"We are sure! There are tests the radiologists devised before the atom war. They tried to find a counter-radiant, and almost succeeded, but for the war they would have done. Even so, they learned enough to tell what caused the damage, they knew of the subtle difference in our bloodstreams, and they were sure that other, normal women could be found who would be able to withstand the radiation."

She slipped from the bunk, resting on her knees beside him, gripping his hands.

"Take me home, Carl. Take me home!"

"If I only could!" He pulled to her feet, and began striding along the narrow cell. "We need women. We must have women if the colony is to become anything more than a dumping ground for Earth's unwanted." He sighed hopelessly. "It's of no use, Phobos. Even if I did take you back, what of the others? What of the other men? It would only cause trouble."

"But there are others beside me, Carl." She laughed at his expression. "At one time there were over three hundred women on Mars, all intent on having as many children as possible. Most of them had two, all had one. Over four hundred children were evacuated, half of them girls. Would two hundred women be enough for your colony?"

"Two hundred!" He looked at her in amazement. "Of course, but do they all want to return?"

"Most of them do, a few are satisfied as are the men, but we have a special reason for wanting to return."

"A special reason." He tilted her head, looking deep into her clear grey eyes. "What is that?"

"Our mothers became sterile on Mars, Carl. They became sterile, and died. We are in no danger of dying—but we cannot have children here on Earth."

"And on Mars?"

"We can hope. Here there is no hope, only certainty."

From the door someone laughed, and entered the cell.

Lasser looked tired. He slumped down onto the edge of the bunk, and dismissed the guard with a gesture of one pudgy hand. He laughed again at the flush standing clear against the pale skin of the girl, and winked at Carl.

"I wondered when she would be after you," he said wearily. "Did you make any promises?"

Carl stood, one arm around the girl, and didn't answer.

"As you may have guessed, you're a free man." Lasser said dully. "The hypnotic probe, the truth serum, and the lie detector all agree that you are telling the truth. Conroy also bears out your story. Fantastic as it appears, you seem to have the whip hand. What do you want?"

"Nothing more than I asked. Three ships to be put on full service. Supplies as requested. The colony to be given a say in the way it's run."

"No free pardon?" Lasser looked quizically at Carl.

"No. I took my chances, I'm willing to pay."

"No, Carl. No!" She clung to his hand.

"He's safe enough," said Lasser. He grinned. "The story got to the press, and he's a world-wide hero. All of us have a soft spot for a romantic criminal. Look at Dick Turpin, Robin Hood, Captain Blood. We can admire a desperate man—if what he does is bold and audacious enough, and what could be more audacious than this?" He grinned. "You should see the papers, Carl. "David and Goliath." "Colony tilts at Colossus." "Interplanetary War." I can't say that I'm too sorry it's happened."

"What?"

"No. My job isn't an easy one, Carl. Money is short, ships are few, and vested interest has a finger in every pie. Mars

just didn't seem important enough to worry about. We needed a shock, and you gave us one. Approbations have been voted, private subscriptions have been pouring in. Money for new ships, money for supplies." He climbed to his feet. "Your ship is waiting to take you back, I needn't tell you who is your pilot."

"Conroy?" Carl frowned. "He should hate me, are you sure that he wants to be my pilot?"

"He threatened to resign if I stopped him. He said that any man who had the guts to do what you did, was someone he wanted to be friendly with." Lasser held out his hand. "You'll have passengers—half the scientific world has gone crazy to study your new plant, and I'm sending two ships." His face darkened. "We can laugh at what you've done, Denton, because we sympathise with you, but if that ship does crash, we'll exterminate the colony to the last man."

"Thanks," said Carl. He gripped the pudgy hand. "Thanks a lot."

He watched the big man swing away, and tried to calm the rapid beating of his heart. A tug at his sleeve jerked him back to reality.

"Are you going to take us, Carl?"

She stood there, her face very close to his and with a look in her eyes he found impossible to resist. For a moment he held her in suspense, then nodded.

Together they ran from the cell.

It was good to be back; to see the small red ball of the distant sun, to breath the thin, dry air, to feel the springiness of muscles released from the drag of heavy gravity. Good to see the gleaming points of stars glimmering against the black sky, and watch the twin moons race across the heavens.

Carl stood at the foot of the loading ramp, Phobos at his side, and grinned to see the black figures of running men.

"They're coming to welcome you, dear," he murmured. "You, and the others you've brought with you."

Fenson came panting up, his thin face eager behind the scratched plastic of his mask.

"Carl?"

"Here. How is everything?"

"Fine. The fenweed has taken firm hold, and is spreading well beyond the original planting area." He looked about him, and pulled Carl to one side beyond earshot. "I'm worried

about Pop, Car. He locked himself in the rocket shortly after you left, and we haven't seen him since."

"Have you tried to contact him?"

"Yes, but he warned us away, said he'd blast off if we didn't leave him alone."

"I see." Carl stood looking thoughtfully at the towering shape of the commandeered rocket. "I'll go and talk to him."

Slowly he climbed the rungs of the ladder leading towards the nose of the vessel. The door was shut, and he beat on it with his clenched fist.

"Pop," he called. "It's me, Carl. Let me in."

He waited, hearing the faint moan of the wind through the fabric of his mask, then hammered again. Acting on sudden impulse, he tugged at the door. Slowly it swung open, light from the setting sun filling the control room with lurid colour.

Something lay beneath the instrument panel; something huddled and shapeless.

He lay quietly on the metal of the desk, his face turned towards the settlement. Blood stained his matted beard, but his face seemed peaceful, and his eyes were crinkled as Carl had seen them so often when the old man had smiled. He held a wrench in one hand.

"We won, Pop," Carl said softly, and was not ashamed of the stinging of his eyes. He looked at the dismantled instrument board.

"You made sure that we wouldn't lose didn't you. You knew what would have happened if we really did crash the ship, but I had to believe that you were ready to wipe out the spaceport. I could have bluffed men, but I had to bluff machines, and I couldn't do that. You had to do it for me."

He stood for a long time, paying his silent homage, then wearily climbed down the ladder. Phobos was waiting for him — she didn't speak, but slipped an arm understandingly through his. Together they walked towards the huddle of domes that was to be their future home.

Tiny plants broke into fragments beneath their feet and a restless wind tugged vainly at the anchored dust. The sun threw long shadows before them, and stars shone steadily above.

Arm in arm the Martians stared across the rolling dunes of their new world.

THE END.

History will show that the first space battle wasn't fought out with super weapons, but in all probability rifles and knives—as in this story.

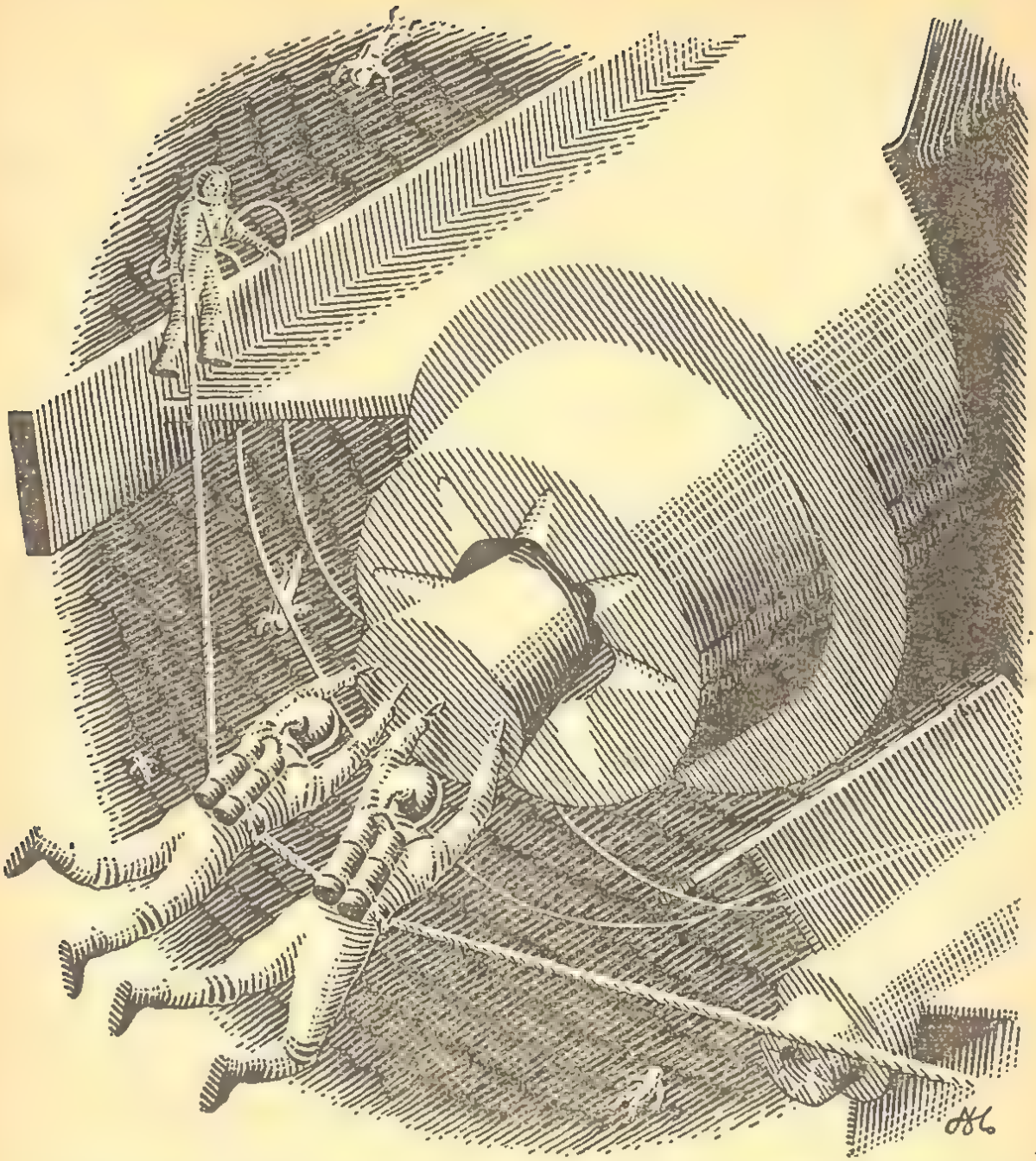
THE HARD WAY

By Alan Barclay

Illustrated by HUNTER

Although I'm an armament specialist myself, and have been for about thirty years, I'm prepared to admit that the average boy of eighteen knows as much about the construction of weapons as I do, and probably understands some of the theory rather better. I was an infantryman in my youth. I got no education to speak of, and all I know about the disintegrator ray is what happens when you press Button B - - - the thing gives a little shake-up to a narrow cone of space extending thirty or forty miles out from its muzzle. Any kind of atomic structure lying within this cone gets shaken up likewise and sort of falls apart. My son was explaining to me only the other day why this shake-up should happen. He can tell me things I don't know about the working of chaser missiles too. Of course, just in case you begin to wonder why I hold my job and draw my salary, let me add that he can't teach me anything about how to handle these weapons, nor how to fight the ships that mount them. There's very few men inside the orbit of Jupiter can put me right on such points as that.

It's a funny thing, though, that none of these smart intelligent educated youngsters like that son of mine seem to know one single fact about how the whole business got started, although it should be obvious enough that space warfare couldn't begin right away with entire fleets of battle-ships, fast scouts, supply trains, chasers, sub-radio range-finders, disintegrator rays, and all such modern and extremely civilised forms of destruction. I began to tell my lad only the other day that the first space battle was fought out with revolvers and machine-guns, but he just gave me one of these cautious, old-fashioned sidelong looks, decided I must be pulling his leg, and went off somewhere.



But what I said is a fact. I ought to know, for I was there. I'll tell you something even more unbelievable still - - - throwing knives were used as well.

Let me tell you about it.

Pardon?—Machine guns? Oh yes. Ground warfare. Anti-personnel weapons, projecting a stream of lead bullets at high velocity. You can see specimens in most museums.

Well, as I was about to say, this battle occurred a long time ago. I had just joined the army as an infantryman. I joined because of having unintentionally hit someone too hard. I

mean I intended to hit him all right but not quite so hard as I did. The battle was fought out between a Mars ship and one of ours . . .

You say there's never been a war between ourselves and Mars? That's quite true. At least, there's never been one big enough to get into the history books, but there was the beginnings of one all right. It's described in the books merely as the Venus Landing Incident.

It's never been denied that there was a deal of hard feeling between ourselves and Mars at one time about a development policy for Venus. Both governments agreed that Venus should be developed all right, but disagreed about the sort of development that would be best. We wanted a long-term policy of atmospheric rectification (rectification towards Earth conditions, of course), climate improvement, and a controlled scheme of immigration with a view to setting up a balanced society. Mars wanted first of all to tear the guts out of the planet with atomic cutters to get at its fissionable materials - - - Mars thought the matter of climate improvement could be nicely left over for about a hundred years or so. It was quite some time later that the natives of Venus managed to get anyone at all to listen to *their* ideas of development, which after all might be considered to be important. I don't believe many people knew there were natives on Venus. I certainly didn't till I got there.

After the incident had been an incident for about a couple of weeks; when the first of the Notes had been passed; after Mars had sent our Government its first aide-memoir (or perhaps it was the other way round—I forget), but before the business had got to the stage of Objections or Protests, our top brains got the notion that their case would be a great deal stronger if Earth actually had control of Venus Landing.

There was only one Space Landing on Venus at the time—a hard patch of ground about three miles in diameter, in the middle of these gosh-awful swamps. It had a Ground Control Approach system which was absolutely necessary with the type of ship we used then. It had servicing facilities, accommodation of a sort, a hospital and doctors, and transport to other points on the planet by means of eight or nine comic-looking aircraft specially built to fly in that heavy carbon-dioxide atmosphere and low gravity. Of course, another landing could be constructed anywhere by an interested party, but

it would have taken time. The top brains didn't have to go actually so far as to give themselves nervous break-downs figuring out that whoever controlled Venus Landing controlled the planet for some months to come, at any rate.

The Government decided to ship out some of us common soldiery to hold Venus Landing.

They sent us in a hired cargo-ship for the good and sufficient reason that there weren't any battle-wagons then. It was one of the old sort, a single main-jet affair with gyroscope. You don't see any of them about now. Nowadays everybody says these old single-jets were really rather wonderful and lasted for years and years. This opinion arose from the fact that any single-jet ship that was the least little bit erratic always let go and smashed itself to pieces at landing after its first or second trip. Those that didn't smash up were reliable. That's why they lasted.

Our ship had a crew of six. They were civilians hurriedly brought into the army with Special Commissions. I thought their nice new uniforms made them look more like civilians than ever. In the hold were seventy-six of us Infantrymen with equipment and weapons. There had been an order that space-suits should be provided for every man aboard, but there just wasn't room for that much gear, and as it turned out, it had only been possible to stow twenty suits plus the regulation six for the crew. Most of us got some training in the use of space-suits on the way out, which was a good thing as events proved.

It was comfortable enough in the hold during the part of the trip that was done under free-fall; each one of the seventy-six just picked a section of nothing to lie on, and lay on it, reading science fiction, or playing cards, or just simply staring at somebody's big behind floating about a yard overhead. During acceleration it sticks in my mind that we were pretty well plastered to the lower bulkhead in layers three to four men deep.

The trip lasted about ten weeks. That was long enough for all the customary stories to get themselves told, and re-told, in most of their local variations, and discussed in detail. I remember that after four weeks, when it was getting to be pretty well agreed among us that every story circulating in every corner of all three planets had been gone over, a little fellow called Joe Adams who didn't usually speak more than

once a day, piped up in his cissy sort of voice and told one that was so new and so crisp it fairly made my hair stand on end.

After the story-telling phase there was a period of boredom enlivened by three or four fights. Then after that I remember a young fellow called Jasper Powdermaker. He was about seven feet high, four feet wide and three feet thick. He started complaining that the officers ought to let us up on deck occasionally to get a breath of fresh air. After that for a whole week most of the Company, sometimes in turns and often simultaneously, tried to explain to him that we were about twenty million miles away from any external atmosphere. We drew lots of diagrams on the bulkheads. We sat or stood or floated round him in circles talking two or three at a time and making elliptical motions with our hands. Jasper just looked at us very slow and wise, and told us that Venus Landing was a township in Southern Australia. He told us the no-gravity effect was on account of Australia being on the other side of the globe, where everything was upside-down and apples didn't fall like they did at home. I thought at least five fellows were going to drive themselves crazy arguing with him. Our Junior Lieutenant who was called Maxted, and pretty reliable as officers go, listened in on one of these debates for about ten minutes, then went away and fetched the Major. The pair of them sat among us for about an hour, never saying a word, just listening.

Nothing happened—that is to say, nothing except the story-telling and the fights and the argufying—until we were no more than a few million miles from our destination. And even when something did begin to happen, we soldier-boys knew nothing about it at first, and this next bit of the story I got from the radio operator.

The thing that happened was another ship. It appeared at first on the screen as a minute point of light and nothing could be determined about it except that it held to steady course converging on ourselves and moving at about the same speed. A couple of days elapsed before the ship enlarged sufficiently in size to be identified as a Mars ship called *Pendragon*. It was the same size and type as our own, with an identical single-jet motor. This similarity wasn't so surprising as you might think, for there were no more than two or three types of spacecraft in existence at the time.

The skipper fetched the Major up and the pair of them sat

and watched the screen and discussed the business for a while. There was no ordinary reason for a Mars ship to be heading for Venus. No such voyage had been notified. It seemed to add up to one conclusion only, that the old proverb about possession being nine-tenths of the law must be current on Mars as well as on Earth. The skipper and the Major decided to conclude that the *Pendragon* must be loaded with Jacko soldiers sent out to occupy Venus Landing.

After accomplishing this piece of thought the two brains rested themselves for a short time, and then came up with the determination that we must reach our destination ahead of the other ship. There was not a sufficient surplus of fuel to permit continuous acceleration—especially as still more fuel would be required eventually to cancel out the excess speed —but we had a half-hour burst of jet at about two G. Down in the hold this meant we spent the time lying elbows in ribs and boots in a jumbled cursing, wriggling heap against the bulkhead. The Jackos did the same thing. After that both ships must have decided they hadn't fuel to waste on further acceleration, for each continued on steady course, gradually converging.

Approaching Venus the ships almost simultaneously began to turn their tails round for descent. Obviously enough, whoever was first into position over Venus Landing could make his descent and get troops out before the other touched down.

Our skipper swung the tail round quick and made a really fierce deceleration which brought him slantwise down through the atmosphere and into position right bang about five hundred miles above Venus Landing. Here he stopped descent to wait for signals from Ground Control. He looked around and about and saw no signs at all of the *Pendragon*, and began to feel pretty pleased with himself.

He staved pleased with himself for about ten seconds. What stopped him feeling pleased was a long thin finger of blue light standing vertically over to port . . . It jiggled and wobbled a bit and seemed, if anything, to be coming nearer. Without the aid of paper and pencil, and without even counting up on his fingers, the skipper worked out that this must be the *Pendragon's* jet, and that ship must be almost vertically above and no more than five miles off.

"*Pendragon's* signalling Ground Control for permission to land," the Radio Op. reported.

"Signal Ground Control that we have priority, and tell *Pendragon* to get to hell up out into space till we've landed." the skipper told him.

The Radio Op. went back into his cage for about two minutes, then re-emerged, running.

"*Pendragon* keeps calling Ground Control, it's not receiving any radio. Says it'll start manoeuvring right on to the beam and start coming down on its own. Ground Control's screaming to us both to sort ourselves out."

The skipper started out over to the left and watched the long thin pencil of light jiggling and shifting.

"Major," he said, "there is about to be a most unfortunate accident which will lead to regrets, apologies, and perhaps compensation. The *Pendragon's* skipper is giving an imitation of a man who doesn't know we're here . . . He's going to come down the beam on top of us and accidentally-on-purpose fry us with his jet."

"I don't think we should allow that," the Major remarked, with considerable calmness.

For answer the skipper pushed the main lever and the ship bounded upwards. The Radio Op. told me he saw us whistle past the *Pendragon* at a distance of no more than a mile. "I could've put out my hand and touched 'er," he said.

"I think," the skipper observed when the racket had subsided, "we might make another attempt at a descent." He looked at the Major questioningly.

"Why not?" the other replied. "The Jackoes invented this game . . . let's see if we can play it too."

The skipper began twiddling his levers and buttons. The ship jerked up and down, wriggled sideways.

But the *Pendragon* was not to be so easily caught in its own trap. In a minute or two we saw it in its turn slide quickly up alongside.

Our skipper pressed his thumb on a firing button and kept it there until our speed was equal.

The two ships were now no more than half a mile apart—probably closer than any ships had ever been in flight—and it was clear that whichever one fell behind was certain sure to get it on the nose from the other's atomic jet.

This fact was equally clear to both skippers. Our own kept his fingers near the firing button. Whenever he saw a flicker of blue flame from *Pendragon's* rear, he pushed and

kept pushing till the other gave up.

He tried a quick burst himself, but lifted his finger when he saw an immediate answering shaft of flame from the other ship.

So there we were, screaming away from Venus towards nowhere in particular, with every burst of acceleration adding to our speed, and incidentally the more we built up speed, the more fuel we would have to expend eventually to reduce it.

"This could go on forever," the Major observed.

"Well, no," the skipper disagreed. "We used up fuel decellerating towards Venus; we used some more making our descent towards the Landing; then we used up a hell of a lot climbing again. We're using fuel in this game of tag we're playing now; eventually we must use still more doing all the same things over again in reverse order if we want to get back.

Within the last hour the question of fuel-expenditure has advanced to the position of number one priority worry in the long list of worries I carry about with me. I hope the Jackoes are worried too. For myself, the sooner they decide to call off this game, the better I shall be pleased."

Evidently the skipper of the Mars ship was doing a bit of worrying along the same lines, for although one of our ship's officers was kept standing by ready to fire the jet again should the *Pendragon* accelerate, there was no further need. The two ships lay side by side. Lieutenant Maxted came below to pacify us. Without an inkling of what it was all about we had been alternatately piled against the bulkhead during bursts of acceleration, and then refloated again just in time for another pile-up. Suggestions were being made among us with regard to the ship's crew that were, to say the least of it, biologically improbable.

And the ships continued to lie side by side.

"This," the Major remarked for the second time, "could go on for ever."

Down in the hold that incredible fellow J. Powdermaker, Esq., had just induced Lieutenant Maxted to explain it to him all over again for the fifth time. A light of understanding at length dawned in his big blue eyes.

"Why don't we get right out there and board 'em?" he demanded.

The Lieutenant looked at him thoughtfully, and then punted himself off the bulkhead on a nicely calculated trajectory that

sent him gliding up to the roof and out through the trap-door. He pulled himself along to Control.

"One of the boys down below has just used the word 'boarding'," he told the Major. The Major kept on looking out of the observation port.

"Ah!" He exclaimed . . . "talking about boarding parties . . ." he paused. "My orders are limited to occupying Venus Landing and maintaining control of it. I don't think a favourable view would be taken of my making an attack on a Mars ship out in space. However, if we were made the subject of an attack—an unprovoked attack — " His eye wandered from Maxted to the skipper. " — we should, of course, defend ourselves. And since the *Pendragon* has behaved once already in a decidedly unfriendly manner, we may hope that she will do so again. Meantime, let us prepare. Maxted, my boy, start getting those suits out, and see whether you can rig up some sort of hook or lever on each machine-gun and automatic rifle so it can be loaded and fired by a man wearing space-suit gloves. Now, Skipper, suppose you were going to make an attack on this ship, how would you go about it?"

"Well, I'm no soldier, but it seems to me the only way of getting in is via our cargo lock. I'd send some men to jump across and open it from outside."

"That can be done?"

"Oh, yes."

"But would these men not be observed and picked off?"

"Once they'd crossed over, they'd be concealed from view by the curve of the hull. I think they might even cross without being spotted, if they went out by their own cargo lock—it's on the far side of their ship, of course—and went down towards the tail, and came round underneath. As for picking them off, Major, how do you imagine we could do that?—open a couple of windows and lean out?"

"Of course not—stupid of me. Well, you've convinced me they can get across and start opening the lock. What would you do then—if you were the Jacko commander, that is?"

"Keep our outer door open and blow in the inner one with explosive," the skipper said, warming to the game. "That would evacuate the hold and the corridors and any other compartment that didn't have its airtight door closed. In addition, of course, it would kill every person in those places who wasn't

wearing a space-suit."

"I get that—then?"

"If we ourselves had men ready in space-suits, we could still make a fight of it. If we were taken by surprise, most of us, except those who happened to be up here in Control, would now be dead. The Jackoes could go down aft and cut the fuel supply and control system, even destroy the engines — "

" — and then return to their own ship, push off, and leave us?

"Of course, it's a game that two can play," the Skipper suggested.

"As you say . . . But as this is an entirely new sort of warfare for which no text-book exists, I'm rather in favour of letting the enemy make all the initial mistakes — but we can prepare counter-measures. Send this message down to Maxted: There are only twenty suits. Issue these and automatic rifles to the most experienced men. They're to put them on at once, and remain in the hold, away from the lock. Men not wearing suits will come up out of the hold. Put them anywhere wherever you can, in the store-rooms, in the officers' rooms, anywhere. All air-tight doors to be kept closed . . . Now tell me how we can best keep watch on the lock?"

"We can't. There might be ten Jackoes outside, and still we'd not hear them because of the hull insulation."

"Then we must send someone outside to keep watch."

"We can't open the lock without being spotted. It's facing towards *Pendragon*, and visible from their observation windows."

"Only the crew exit. It faces *Pendragon* also."

"There must be a rubbish-chute."

"Of course . . . But it's only a tube about two feet six in diameter."

"Does it face *Pendragon* too?"

"No."

"Then we'll use the rubbish-shute."

I was the first man ever to leave a ship in space via the rubbish-chute—or at any rate, I was the first live man to do so. The citation said afterwards that I volunteered for this hazardous mission. This is a lie. It happened like this. As Lieutenant Maxted asked for a volunteer, he fixed me with a dark, compelling and hypnotic eye. I didn't emerge from the trance state until my pals were patting me on the back and

shaking hands and asking me whereabouts in the ship I had hidden my stock of cigarettes.

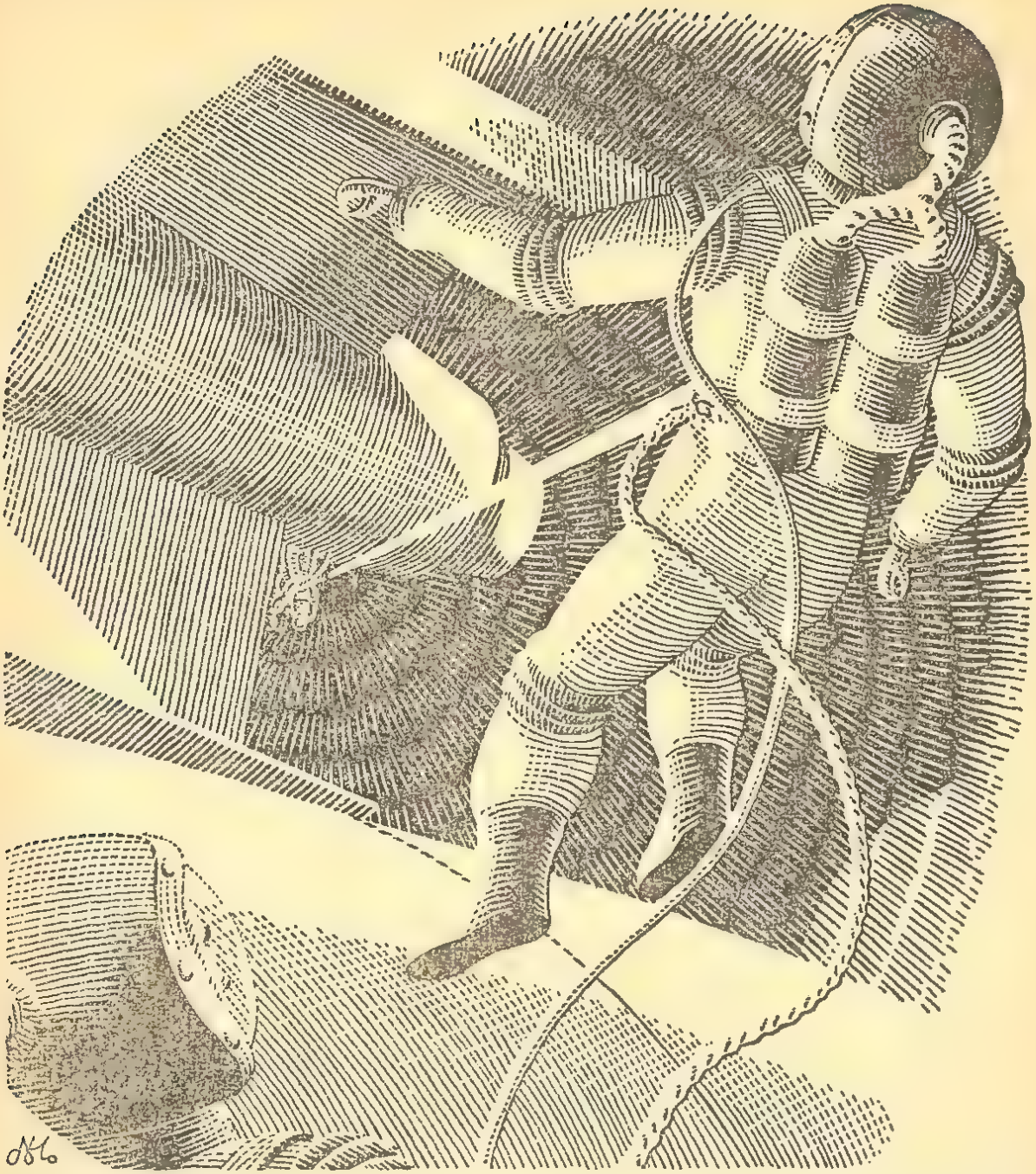
They tucked me into the shute, space-suit and all, like a cooked chicken in its tin, and crammed in hanks and hanks of nylon cord beside me. One end of this cord had been fastened to a projection beside the shute, and the other end to my middle. Then someone clapped the lid down on me. A moment later the outer valve was opened and air snorted out into space and carried me with it. I grabbed the cord as it paid out and hauled myself back again and there popped out a pair of feet followed by the rest of a space-suit. I looked in the helmet window and saw the calm and interested young face of Lieutenant Maxted. He had a field telephone fitted inside his helmet and trailed its leads as well as a nylon safety cords behind him.

Magnetic hull-shoes weren't part of a ship's equipment in those days—the idea of incorporating thin steel walking-strips into the magnalloy skin of the hull was not thought of until about five years later. I discovered that the faint gravitational pull of the ship's mass was just sufficient to keep me lying against the metal surface. The Lieutenant and I worked out a rather comic technique of sliding over it, using hands and arms in a kind of swimming motion, but any pressure against the hull, even a push with the fingers, was enough to send us floating gently off. When this happened, the best thing to do was nothing at all, except to continue thinking peaceful thoughts until one had drifted back.

We were on the dark side of the ship. The stars around us were big and dark and unwinking, and widely different in colour. Venus lay like a great plate of mushroom soup over to my left, and I suppose I ought to have been scared stiff, but I don't remember that I was particularly. I think the situation was so strange that my scare-apparatus just didn't react to it.

We swam slowly over the curved hull of the ship till we reached the boundary of dark and light - - - a boundary that was as sharply marked as if with a pencil. Here the other ship lay in sight. For a while we lay on our stomachs, craning our heads back uncomfortably, studying it. The side facing towards us was in darkness, except for a thin silvery strip along its top, and a patch lying slantwise over the tail fin.

I looked along the flank of the *Pendragon*, yard by yard; I



probed the pitch-black areas beneath the fins and under its belly; I studied the chunk of blue-black inky space lying between it and ourselves; there was no sign of any movement.

Maxted tapped me on the helmet with a metal claw and looked a question. I shook my head. After that I saw him screwing his mouth round to talk into the telephone. Finally, after a good deal of chin-wagging, he made signs to me that I should remain on watch.

I stayed where I was for about half-an-hour, I suppose. I kept my eyes pretty constantly on the other ship, but managed

now and again to spare a glance at the Lieutenant who had returned to cover and was getting in some space-walking practice. First he tried swimming along the hull, but as he did this much faster than before, he only succeeded in swimming himself out into space. Then, pulling himself back with his rope, he tried walking. After only a couple of steps he found himself about fifteen yards away from the ship. Finally, having worked himself up towards the nose of the ship, he pulled in the slack of his nylon cord and projected himself in a vigorous leap. Like a stone on the end of a string he swept round in a great half-circle, to land on the hull once more, near the tail.

When after half an hour he relieved me on watch, I tried this new form of sport likewise - - on my first leap I acquired a slow turning motion about my personal centre of gravity, which caused me to hit the side of the ship head-first and upside down. But I was given no time to perfect myself in these manoeuvres, for the Lieutenant signalled to me with a motion of his arm.

I swam cautiously up beside him and peeped over towards the other ship. Coming over into view on its sunlit top were three round shining blobs. They were space-suit helmets. We slid back a little and kept on watching. I saw Lieutenant Maxted talking into his phone. The blobs became whole men, who slid over the top and down into the darkness of the near side of the *Pendragon.* They were dragging a couple of unidentifiable objects with them, but nevertheless seemed to be more experienced in this no-gravity locomotion than we were, for they got about with speed and certainty.

The group of figures seemed to pause for a few moments in the gloom under the flank of their ship, then one of them came floating swiftly across towards us. I saw a rope pay out and lie in a dim thin line behind him. This first figure passed out of sight under the swell of our own hull. A second floated out swiftly across in his wake. More space-suited figures—perhaps ten—crawled over the sunlit top and down the side of the *Pendragon.* to cluster in a group at the point from which the first two had made their leap, but none of these leapt across. I was ready to bet a week's pay, however, that they were mounting a machine gun to cover their two men now attacking our main lock.

Up till now this weightless floating and sliding about on

the ship's hard skin with the black velvety space all around us had seemed rather like one of these smooth-flowing sort of dreams one gets at times—I don't think I believed it was quite real, nor that these clumsy metallic figures were really living men, intent on doing us real harm.

Then something happened—suddenly and horribly. I'll tell you some of it, but not every detail, for bits of it aren't pretty.

Lieutenant Maxted had just risen to his feet and moved forward a bit, trying to look round and downwards in the direction of our own ship's main lock. I was lying flat, half-turned on my side, and looking towards him. There was no sound, no shot, no whistle of bullet. The young lad just whisked back off the ship. A small jagged gash appeared in his suit; stayed small only for an instant, then under the pressure of escaping air ripped into a great tear from shoulder to waist. Other things happened that weren't very nice to see. Just think of a man's chest and stomach being full of air at normal pressure, then think for a moment of every ounce of external pressure being lifted, right down to space vacuum . . . Don't think of it too much, though, or you may begin to feel sick. Anyway, he must have been dead in an instant.

Just as I began to struggle back out of range of the other ship, I saw thin red flashes of light coming from underneath its tail-fin. I left Maxted floating out there at the end of his rope. I went back to the refuse-shute, wriggled up into it, and knocked on the inner lid. The outer lid clonked shut, I felt air rush in and grip around me, then I was dragged into the ship and hands were helping me to take my helmet off.

The Major was standing by. He had heard things over the telephone for a brief instant after Maxted was hit. I didn't have to tell him what had happened.

"He was shot?" He stated rather than asked.

I told him about the two men attacking our main lock, and the machine-gun party covering them.

"It was this bunch who shot Lieutenant Maxted?" he asked.

"No," I said. "Of course, out there's a bit different from ordinary; no noise . . . But just after he was hit I saw flashes coming from under the *Pendragon's* horizontal tail-fin."

"Right," the Major said. "We're in the clear now. They've first of all tried to fry us; now they've attacked us and killed one of our men. They're the aggressors. Whatever we do now is in self-defence —. Let's go and fix them."

I thought this was a nice manly speech, and inwardly agreed with the Major about the importance of fixing 'em, though I couldn't see how he proposed to set about it. What I could see was a number of our lads getting busted open if they came out through the lock to attack the machine-gun party opposite.

However, our first move was managed better than I expected. I didn't see it myself, for I was being pushed back through the rubbish-shute again to keep watch. This time I had a gun with me, fitted up with a half-circular armour-plate shield, and a two-way radio intercom. set. This radio intercom. was a single valve super-regenerative thing about the size of an egg-cup. The radio-op. who was a man of imagination (later on he became a good pal of mine), had realised that something of the sort would be needed in this new kind of warfare. He had started wrenching valves out of any radio set he could come across—but not getting quite as far down the priority list as his own—and had made three of the intercom. things already.

But, as I say, what with getting some information in the use of this set, and trying to fix it in my helmet so that the wires didn't get tangled up in my teeth, and then being stuffed once more through the old garbage-can with an automatic rifle clasped to my bosom, I only became fully operational towards the tail end of our first attack. The Major began by deciding that if these Jackoes outside really wanted to open our lock, the friendly thing to do was save them a whole lot of trouble and to do the job for them—and to have a reception party waiting for them. He had a bullet-proof barricade about two feet high fixed up within the lock—that is to say, between the inner and outer valves, and then got a couple of good level-headed fellows in space suits established behind this barricade, each with an automatic rifle pointing outwards through a convenient slot.

When these two men were nicely settled, and feeling comfortable, and got something to lean their elbows on at just the proper height, the inner valve was closed, air evacuated, and the outer door opened. The outer door is a massive circular affair locking on the interrupted thread principle, so the valve motor has to make it first rotate about an eighth of a turn, then move it out on a metal arm, then swing it round.

That pair of Jackoes working outside the lock had time to realise that things were not proceeding according to their plan,

at any rate, and they drew back to one side. Their covering party saw the valve begin to open, and quite naturally supposed that their own two pals had swung it round. I suppose they expected to see the said two pals start their attack on the inner door. Whether they thought that or something else isn't really very important, for our two men behind the barricade opened fire and killed all five of them in under a minute.

It was just about then that I crawled cautiously round the hull again, pushing my gun and armour-plate shield in front of me. I saw the half-dozen swollen mis-shapen bodies drifting in various directions near the enemy ship, and guessed what had happened. I reported the situation over my intercom.

Somebody—I couldn't tell who it was, for the voice sounded as if its owner was in the habit of eating barbed-wire—began to ask some further questions, but I became busy at that point and could not spare him much attention.

I got busy because I saw the two Jackoes who had been trying to open our lock sailing back across to their own ship. I decided I would get both of them. I understand I stated as much out loud into my intercom. and that consequently a number of people in the ship became interested listeners-in. Rifle shooting out in space is too easy to be interesting. There's no bullet-drop to allow for, or air resistance, or windage. You just point and fire. I hit number one all right, but I wasn't able to deal with the second for the simple reason that my gun recoil floated me backwards off the hull—backwards and also slightly up, since I had fired downwards. I recalled rather vividly the flashes that I had seen coming from under the tail-fin at the time Lieutenant Maxted was shot, and tried desperately to turn my inadequate shield round so that it would give me protection from that direction.

I kept on floating, and talking about it to myself pretty loud, I guess, so it was a minute or two before I managed to give attention to the tinny but authoritative voice shouting in my ear.

"What's that?" I asked.

"Stop flapping and use your gun," the tin voice ordered calmly.

I got the idea at once. I tilted the gun up and ripped off four or five rounds which sent me off on a fast glide down into cover behind our ship. I remember pointing the gun at

a big star as I pressed the trigger—Betelguese, it's called—and I've been told there's no reason why these four bullets shouldn't hit that star in about five thousand years' time.

When I had hauled myself in on the rope and crawled back on to the top of the hull again, more events had happened. The Jacko machine-gunners were still under the tail-fin; I could see the streaks of flame from their guns. In addition to these, there were about five of the enemy in positions similar to mine on top of *Pendragon's* hull. Some of our own chaps were just coming into view as if they had leapt out of the lock. Their objective, I suppose, was the machine-gun group, but none of them reached even half-way across. They were all killed in a few moments. I reported this on the phone, and no others were sent out. It seemed to me like stalemate, for although there was now little chance of the Jackoes making a sucessful attack upon us, we on the other hand could do nothing against them.

The Major didn't care to have me reporting in detail over our newly rigged radio intercom., so he ordered me back into the ship.

I think I mentioned near the beginning of my story that I am a full General nowadays. Well, of course, this didn't happen to me on account of having education or genius for administration, or even because I have any particular talent for leadership, but because I have kept on having dam-fool ideas. Judged purely on their merit, my ideas are usually pretty sound, but they qualify for the dam-fool ticket because they have mostly been dangerous and because no sooner do I open my big mouth wide enough to make them public than I find myself elected to carry them out.

That's what happened now.

"What seems to be the main trouble, Corporal?" the Major asked.

"The main trouble, sir," says I, "is the machine-gun squad established under their tail-fin. The fin gives them good cover and they've the extra advantage of being in the darkest part of the dark side of their ship. From there they cover both our cargo lock and crew exit, which are on the sunlit side. Trying to use them is just suicide. Our boys were picked off as fast as they jumped out. Of course, they can't do us much damage either. If I was you, sir . . . "

I stopped just there, thinking that after all I wasn't paid

to give advice to majors.

"Go on, Corporal. To date you've had more space-battle experience than any man this side of Antares—. If you were me?"

I looked him in the eye for a moment, and decided it might be worth my while to tell him.

"Like this, sir . . . " I began—and went on.

"You know you're wasted as a corporal," he remarked when I had finished. "I like your scheme . . . I want you to go right ahead with it."

I'd better explain in passing, just in case you get wrong ideas about this officer, that my scheme involved making an exit by my customary route, the rubbish-shute, and therefore the Major, being about a yard and a quarter wide, could not by any means be among those present. But I had reasons for refusing to take the lead.

"Sorry, sir," I told him, standing very stiff.

"It's an order, Corporal," says he, very soft.

"I wish to object," I answers him. "A Corporal may take command of men for the purpose of acting on precise instructions issued by a superior, but is incompetent to prepare schemes or make decisions of a major character—Sir."

The Major looked at me. "I wonder if that regulation really is in the book, Corporal. All the same, I take your meaning —. Perhaps you'd feel capable of planning and taking decisions if I promoted you Sergeant here and now?"

"It'd make me a lot happier, but I'd still feel my authority to be pretty shaky."

"You appear to be a very remarkable man, Corporal," the Major replied. "I'll make you up to Sergeant now and recommend you in my next report as being unusually good officer material."

I guessed that was as much as I could get out of him, so I accepted.

This is what we did.

Six men—they had to be small—went out through the shute, taking a machine-gun with them, and began to make their way towards the tail of our ship. They were to remain under cover behind the vertical stabiliser until further orders. Two other men with rifles moved up on to the top of the hull where they kept up a sniping fire on the Jackoes established on the *Pendragon*. I should have preferred several more for

this part of the task, but we had run out of pint sized soldiers. The men were better off than their adversaries across the way, however, for they had bullet proof shields to their rifles.

Three other men—one of them being myself—came out through the shute, each with a length of nylon cord and an automatic pistol. The pistols were long-barrelled jobs, and we carried them tied along our forearms with cord. We also made our way along towards the tail, and here we fastened the free end of our nylon cords to the hull. When I had made quite sure my men were anchored, I put my feet carefully against the vertical fin and punted myself out laterally at right angles to the ship—that is to say, in the direction opposite to the *Pendragon.* My two men did likewise and presently we lay out at the full extent of our cords which were—this is an important point—as nearly as possible as long as the distance from our ship to the *Pendragon.* We each carried in addition to our pistols a novel item of equipment—a sort of home-made chemical rocket fastened on a long pole.

Our next move might have looked slightly comic to a disinterested onlooker, but it wasn't to me, as I was playing a leading part in it. I spoke just one short sentence into my radio:

"Here we go, boys." I said.

The riflemen on top of the hull opened up a brisk fire.

I raised my rocket above my head and got a tight grip on the pole.

I pulled the string that lit the fuse. It wasn't a very powerful rocket and I felt no more than a gentle push on the pole. I clung to the pole.

I saw our ship begin to move up—only in actual fact it was me who had begun to move, downwards—not that downwards meant anything very much. At the end of my cord and urged forward by the rocket motor I swept round on the arc of a circle whose radius was the distance between our ship and the *Pendragon.* Passing below the tail-fin of our ship the *Pendragon* came in sight. I rode my rudimentary locomotive much as a witch would ride her broom-stick.

I swung right down below our ship and swept on upwards. I manoeuvred the pole, trying to steer myself right on to the machine-gun crew under the *Pendragon's* fin. I think they spotted the flare of my rocket as soon as I began to arc up towards them, but they had their gun lined on to our cargo

hatch, and they manoeuvred very unhandily in these conditions of no-gravity. Besides, I was never moving on a straight course. Although the rocket thrust could not have exceeded three or four pounds, my velocity as I approached the *Pendragon* was quite enough to slam me hard against her hull if I didn't take care.

At the last moment I swung my rocket round in front to slow me down, and managed to come bang in amongst them with the flaring rocket leading.

There was a most gorgeous mix-up. I released my hold on the pole and the rocket shot upwards and off. Now the machine-gun crew were able to see me properly for the first time. The gunner started to move the gun round. I did not make the mistake of any fancy shooting while I was floating free, but first I fired two shots downwards which sent me back up into the dark corner between the vertical and horizontal fin. I fired a third shot to wedge myself there, then aimed carefully at the man with the gun.

The rush of air from his punctured suit kicked him backwards and out of sight. My second man arrived just then. He came spinning in under the fin, all arms, legs and rocket pole together, and hit one of the Jackoes with his behind. I stayed up in my corner and plugged another of them at the first opportunity. My man kicked a third in the face and cracked the glass of his helmet. And then there was one. This last man decided to get out, but mis-judged his jump in such a way that he sent himself floating outwards. I think one of his own friends shot him as he drifted past. I never saw the third man of my own squad again. I learned that he swung off course and passed well clear of the *Pendragon's* fin on the end of his cord. He swept up and up and almost completed a circle before his rocket spluttered out.

What happened then was strictly in accordance with the laws of dynamics which he and I didn't know anything about. He continued circling for a while, then began to pull himself in along the rope. The rope meanwhile was shortening by winding itself round the tail end of the hull. His velocity increased rapidly as the radius of swing diminished. Finally, in panic he cut himself loose from the rope and was flicked upwards into space.

But the first part of my plan had been accomplished. I now had control of the tail end of the *Pendragon*. I twisted my

mouth round and spoke into the radio microphone.

"Bring 'em on, Joe," I said.

Out from under the tail of our own ship there shot three space-suited figures. They had nylon safety cords like us, but they came straight across using two rockets. The boys on the top of the *Pendragon* had a crack at them on the way across, but scored no hits.

There was a wild moment of tumbling shapes and pole rockets flaring and bouncing about till we got ourselves sorted out. I tapped each man on the helmet and indicated what he must do. Knives were screwed into the hands of our gloves and we set to work ripping and hacking. For the third space-suit didn't contain a man at all. It held one of these stoneware jet-orifice plugs instead. You must have seen them often enough; they're about six feet long, tapering from three feet in diameter to eighteen inches, and are used in port to seal off any hard radiation lingering in the material of the tube. They also prevent birds from nesting there and small boys from climbing in to see the wheels go round. I had dressed the plug up in a suit in case any Jacko should injure his brain trying to add two and two together.

We ripped the suit off the plug in no time at all and floated it gently into the *Pendragon's* tube. One of the attractive features of these plugs is a metal withdrawing grip. The plug tends to get wedged, especially if put in hard and with a turning motion, and without the grip they are very difficult to remove. I need hardly say that the withdrawing grip had been thoughtfully cut off this particular plug.

Just as we had got the thing nicely wedged in, someone tapped me on the helmet with a metal glove. I looked round. A pair of booted feet were coming into view round the edge of the horizontal stabilizer. After the feet came the usual number of legs, then a trunk, and finally a round helmet. I just got a glimpse of the face inside the helmet. It was grinning agreeably. Quite evidently the owner of the face hadn't got himself in touch with current events. He seemed to think he was paying a call on friends. One of my men—Joe it was I learned later—chucked a knife at him. It went spinning forward and slit the fabric of the suit just at the shoulder. Escaping air swiftly enlarged the rent, and at the same time jetted the man upwards. The last we saw of him was a pair of boots rising swiftly out of sight.

I motioned to my boys that it was time to go home.

"So far, so good," I said over the radio. "We're coming back."

We began hauling ourselves back along the cords. Unseen hands on the other end of the line pulled as well, and we were fairly whipped back to the shelter of our own tail fins. From there we crept along the dark side of the ship to the rubbish-shute. The riflemen had come down off the top and popped back into the ship. We popped back after them as fast as we could.

And that's about all there was to it. Our skipper fired the main jet while I was still lying in the chute—I felt the surge of acceleration.

The skipper of the *Pendragon* promptly fired his jet too. It blew our plug and itself and much of the tail strutting to pieces.

We manoeuvred in ahead of *Pendragon*, till our jets pointed fair and square at its nose, then sent a radio suggesting they surrendered.

They did.

After we had pumped the residue of their fuel across into our tanks we made back to Venus Landing, and took over as ordered.

THE END.

THE LITERARY LINE-UP

Martian stories seem to be at peak popularity just at present; quite unintentionally the lead novelette "This Precious Stone," by H. J. Murdoch in the next issue is located on the Red Planet. The Martians, naturally, are jealous of their dwindling water supply—the Earthmen need water for their journey back to Earth. That's the simple setting which starts a fast-moving story.

John Christopher is back with "Museum Piece," (not a Max Larkin story), and other fine shorts by Alan Barclay, E. R. James, E. C. Tubb and J. F. Burke will be in the contents. Ratings for the January issue were:

1. Assisted Passage - - - James White
2. Alien Dust - - - - E. C. Tubb
3. Heroes Don't Cry - - - Gordon Kent
4. Chessboard - - - - J. F. Burke
5. Galactic Quest - - - George Duncan

Negotiations with the alien ambassadors demanded a demonstration of Earths's power. Specifically electrical. Keeping the power-lines open and functioning was a major problem for the Chief Engineer.

POWER FACTOR

By Francis G. Rayer

Illustrated by CLOTHIER

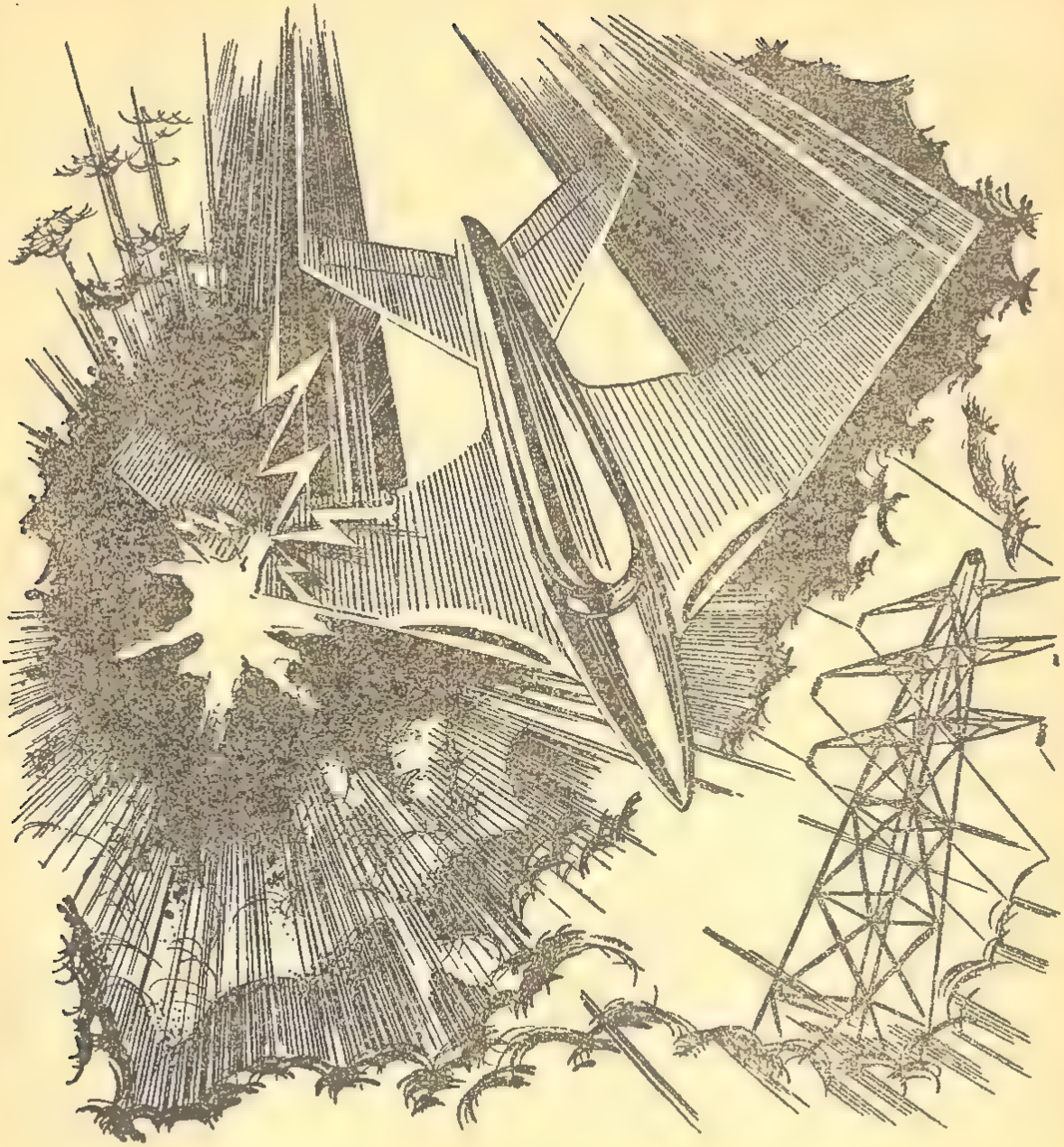
"When humanity reached the third planet of the Myra Group it was habitable but uninhabited - - - not until a generation later was an alien life-form located in that part of space, but contact with it was difficult to establish . . . ."

E. R. JAMES: "History of the Seven Empires."

Wind tore down from the hills, bringing the distant thunder of the mighty cataract of the Eider Dam. Sam O'Connelley looked over his control-panel and from the curved window of the power-house building. Orange clouds marked the spot where Myria Major had set. Soon would come the twenty-hour night, the period of peak load.

The desk communicator buzzed.

"Main Central here," Sam said automatically.



"There's a memo from Diplomatic West." It was the girl in the office below. "Urgent."

"Read it."

"From Diplomatic West. Regarding first landing of Aliens. Whole of Valley City to be fully illuminated through dark period. Valley City in no circumstances to be included in load shedding area. This an order and priority."

Same sighed. "So they're taking no chances? They want the whole place bright as day."

"Seems so, Mr. Connelley." She hesitated. "We were wondering . . . ?

"About Meriel? The hospital says it will be tonight. I saw her a few moments on visi. She's taking it well, but . . . " He hesitated. "No use pretending. It's serious."

He knew the girl below was worried. Everyone in Main Central knew everyone, and everyone's affairs. His wife Meriel has been one of them until two weeks before. Her going, and the manner of it, had saddened the tiny community of the powerhouse that was perched on precipitous rocks twenty miles from anywhere.

"I'm sorry, Mr. O'Connelley — "

He switched off. He wondered whether Meriel would live through the operation. Perhaps. It had been nobody's fault that a half-ton derrick block had come loose and nearly taken her life in its swing. Perhaps it would have been better if she had died, he thought bleakly. That would have been quick and comparatively painless . . . smashed spines *did* kill people.

Night was coming. Just over the rim of the hills he could see the reflected glow of Valley City. Diametrically opposite, a full hundred miles behind him, Meriel lay at Medical Centre. Between them stretched rocks, ravines and stony desert.

A light on the wall map went on. East, over the rim of the horizon, darkness had come. A string of power-houses dotted Myra 3, joined by an immense grid that straddled mountains and valleys. Water power was cheap—and the only power available. Another indicator glowed. The twilight hand was creeping west and station after station taking up the load as a million lights came on and a million factory hands began shifts that started with the cool of evening.

Sam rested his hands on the desk, his fingers near the rows of control buttons, his eyes on the illuminated meters.

In Medical Centre the surgeon straightened and stepped back from the bed where a frame supported a golden-haired woman.

"The twenty-four hour delay until tomorrow could be fatal," he murmured. "The spinal cord is under pressure . . . "

His assistant nodded, his eyes intent on the lined, mature face of his senior. "That was Doctor Crofton's opinion."

His voice was reverent. A young man, he was prepared to go on his knees before the skill of Crofton and Williams. The two, inseparable partners, had pulled back many a shattered human body from the burning.

Williams sunk his chin on his knuckles. "I would prefer

to wait until daylight. There is nearly always load-shedding."

"There's the auxiliary equipment, sir."

Williams did not answer. To him every human life was a thing wholly precious, to be saved if human skill allowed. With fingers firm yet infinitely gentle he had examined the patient; with eyes intent, studied the radiographs. Before coming to the ward he had sat for fully thirty minutes, silent, thinking. He had not seen Crofton, then. Each preferred to arrive at a decision personally, then see if they tallied. They always did.

Crofton, lean, sixty, was in the corridor. Doctor and surgeon fell into step side by side.

"It must be tonight, Crofton."

"Yes, I fear so, Williams."

Williams thought of the mass of tiny, broken fragments of bone. Razor-edged instruments would be within a thousandth of an inch of vital nerves. If those nerves were severed paralysis could arise, or coma, or death.

"Her constitution is good," Crofton said. "But some derangement to her sympathetic system is arising - - - "

"Yes; I noted two phases of cardiac syncopation."

"That's what I mean." Crofton drew in his lips. "Every hour's delay reduces her chances."

The assistant, walking behind, listened eagerly, jumped as Williams turned on him. Williams was brisk, quick - - could have been a General on a battlefield making instantaneous personal decisions.

"Have a message sent to her husband — "

"Mr. O'Connelley, sir?"

"Yes, O'Connelley. Say that we shall operate tonight, beginning at an early hour, and that he will be informed directly the operation is completed, and before if anything arises."

"Yes, sir."

He vanished down a side corridor. Williams thought again of the radiographs. Only once before had he seen a spinal disaster so extensive. He remembered that one still: it had taken eight hours.

Alone in his study he flung open the window. Night darkened the sky. A breeze moved, but seemed unrefreshing. The air bore down heavily. Far away across the sky a momentary flash burned from heaven to rock.

The building 'phone rang and he answered.

"Mrs. O'Connelley will be ready in the theatre in thirty

minutes, sir."

"Very well, matron."

He returned to the window in time to hear the remote echo of thunder. A second flash showed, dim behind cloud. He sighed, consciously relaxing nerve and mind for precious moments. Yes, he thought, those radiographs told a bad story.

Commander Roche listened to the rumble of thunder, and swore. Never before had he felt responsibility so heavy upon him. The whole of Diplomatic West waited upon his merest gesture. From the balcony of his private room he had observed the descent of the alien ship. There had been no belching of fire earthwards, no roar of rockets or crackle of electronic devices. Only a slow, measured descent like a feather drifting earthwards in still air. Now the delegation was waiting. It was his duty, his privilege, to lead them to the alien vessel.

He slid a finger inside his collar, drew himself upright, and stalked down the corridor. On the steps of Diplomatic Centre he paused. As a gesture, it suggested that he was in complete control of the situation, unhurried and imperturbable.

Aides and officers appeared, forming a tail that wound behind him as he passed round the corner of the building.

Ahead was the alien, globular ship, a dull grey that had blended well with heaven and cloud. Radar screens had shown that it was only an insignificant speck that had detached itself from the major blip that still lingered watchfully two hundred Earth miles above.

"They haven't opened their vessel, sir," an aide whispered.

"No."

Commander Roche's voice suggested that he had anticipated that they would not yet have done so.

"What kind of beings are they, sir?"

"The aliens?" His tone almost suggested that his mind had turned to other and more important things. "Who can say?"

It sounded almost flippant, but he wondered what they were about to see. Communication had now existed for almost five years between the newcomers and men, but no personal contact had been made. Then an alien call had suggested exactly this.

"They must resemble us, sir, since they did not want other atmospheric or gravitational conditions arranged for the discussion."

Commander Roche volunteered no answer. He personally

felt that the newcomers had a supreme disregard for such things. *Any* gravity would do—*any* atmosphere—it seemed . . .

Conscious that there were fifty men at his back, he strode on. The grey globe stood thirty feet tall. He hoped the alien delegation was impressed, for Diplomatic Centre was illuminated as at full noon. A bare half-mile away the nearer outskirts of Valley City glared kilowatts at the sky. The aliens would see that mankind had power. That was diplomacy. Ten thousand buildings shone under the night sky. That was impressive. Signs flashed, vehicles roared along lit streets. That showed mankind was no mere savage.

A sudden momentary doubt seized him. "You left orders that in no circumstances was load-shedding to take in this area?"

His aide nodded. "Yes, sir. Very definite instructions. As an order."

"Good!"

Commander Roche strode on, leggings glinting, breeches whispering, shoulders wide; gleaming, erect, tall and determined.

A section of the sphere's side seemed to be growing transparent. The Commander's eyes glinted in the battery of searchlights upon the square; he sensed that many thousands of eyes were upon him—human eyes, looking to his leadership. Alien eyes, too, perhaps, discerning him through the growing transparency . . .

Sam O'Connelley's gaze moved from the wall map to the pointers of the secondary instruments backing up his desk. The load was creeping towards peak earlier than usual, this evening. It was an hour since the girl below had sent up a message.

"They will be operating immediately things are ready, Mr. O'Connelley. You will be informed of progress . . . "

"Thanks, Judith."

He judged that another half-hour would see the load meters approaching the red. Then, by pressing buttons here, oil-filled contactors in the power-house would actuate. Power would be drawn *via* the eastward grid from generators which were creeping into the dawn area and had current to spare.

A phone rang. He took it with one hand, eyes on his meters.

"Main Centre here."

"This is Stanhope Gulley. I anticipate having to make an approximate two-and-a-half per cent. drain on the grid to maintain service."

"Thanks."

Sam wondered why Stanhope Gulley anticipated that—usually they held out. He pressed a communicator button.

"Check why Stanhope Gulley anticipates inability to supply demand, Judith."

A pilot light on the map came on before she answered. He saw that the two-and-a-half per cent. drain on the eastward grid had begun.

"Reporting on Stanhope Gulley." Her voice was clipped, efficient. "Rainfall on the eastern watershed ten per cent. below annual average for the area over last three weeks."

"Thanks."

No water, no power, Sam thought. Rain, in its billions of tiny droplets, was all they had to maintain nine-tenths of the population's requirements.

The window was black. A glow showed where Valley City stood. His mind turned from that to Meriel, miles away.

Though snug in his office the works-manager sighed. "Been the same ever since this alien scare started," he declared. "More production! We need arms, equipment, stores, spares — "

The lanky block foreman nodded. He had entered to a bucolic summons. "What is it?"

The works-manager thumped a blue form on his desk. "Just come in! The eight-hour rest period is to be reduced to four hours and shifts re-arranged to fit. The change is to begin at once."

"It'll cause some black looks, boss. The heavy plant really needs eight hours for checking — "

"It must be four! They say keep it rolling—so we keep it rolling!" He swore. "To them, it's as simple as that!"

Wind moaned over barren hills. High, girdered towers sang to the piping fury of it. Heavy cables, 375,00 volt, three-phase, moaned a low undercurrent of sound. Cities glowed, sprawling masses of light.

Sweating, face white, the pilot stared down into the blackness. Cloud hid all but occasional glimmers that might have been any city within a hundred miles, by map. On the intercom the navigator's voice came, fear in it.

"Any sight of a bearing, sir?"

"No. Any chance of repairing the damage?"

"No, sir. The static just ruined things, here."

Static was a mild word, the pilot thought. Heavy black nimbus had discharged a blue bolt that crackled from cloud to plane and plane to mountain range below. The smell of it and fused wiring hung in the cabin. Without radio and radar he felt like a man without eyes.

Uprushing air tossed the plane. He rose, banking, trying to get a view of the earth below. Fly high—you could see nothing; fly low—you could hit a peak if you were off course. The way to hell lay either way, he thought.

"I could try another parachute flare, sir."

"How many left?"

"Three."

"Try one."

Twenty seconds later it blossomed below, brilliantly white, swinging. The pilot strove to see, lips moving. Then craggy rock showed below and a tall structure of lattice-work metal ahead, too near. He turned the plane, rising, knowing it too late.

A wing struck taut wires. Sparks arced between cables and plane and the latter plunged, swinging devilishly as about a pivot. A scream on the intercom was cut off, lost in the roar of destruction. Sheared sables sprang back like snakes, arcing. Flames licked up from the battered machine, illuminating the rocky hills that stretched away into the dim distances of night.

Commander Roche felt pleased. The psychological approach paid, he thought. Already the aliens had seen that Man was to be respected—was no savage, but fully civilised, powerful, skilled, not to be trifled with. He felt that the first hour of the conference had been a success, and leaned back in his chair.

The aliens sat opposite. Or, he should say, occupied a position apparently on the chairs which had been placed for them. There were seven, he supposed. They were dim, like ten-gallon transparent bottles inside which oscillated a single brilliant red dot. A mechanism stood on the polished table before them. They had brought it. Externally, it was a simple black box.

"We are deeply conscious of the great honour you have done to receive me," it stated.

Commander Roche wondered for the hundredth time whether it indeed made audible sounds or whether the words were projected mysteriously into his own mind. The aliens had brought the box—it had floated behind them, apparently supported by nothing, as they followed in orderly procession back to Diplomatic Centre. They had appeared like a string—rather resembling seven children tightly holding hands.

He drew in his lips. "We humans are always ready to meet beings of other worlds, and to help them, if we can." That word "help" suggested consciousness of superiority. He remembered how that was pointed out in the fifth manual dealing with the psychological approach to aliens.

"Thank you. I shall be pleased to ask for your help if I ever need it."

Commander Roche wondered why they always referred to themselves in the singular; also how long these formalities would last. The main object was twofold—to assure that the aliens were not dangerous, and to obtain an assurance that the human domination of Myra 3 would not be hindered.

"We are pleased to receive you on our planet here," he murmured.

The shapes above the chairs rested unmoving; only the red dots within the transparent outlines oscillated. "By Galactic time, you are newcomers to this area of space," the box said.

The Commander felt that the words "our planet here" had gone unnoticed. "We often colonise and adopt uninhabited planets," he pointed out.

"So do I," the box said.

He wondered if it were a threat. "Such planets we regard as homes from home and protect as such," he declared.

The box offered no comment. Commander Roche felt irritated. He suspected that his visitors were evil, or at least had evil intentions. Things so remote from flesh and blood must be evil! It was necessary to be firm - - to demonstrate that Earthmen knew their superiority. *Seven green bottles*, he murmured to himself. That was psychological, but uplifting nevertheless.

"We humans do not normally tolerate any interference with our plans," he said. "We are a determined race."

"An admirable characteristic."

"When we begin a thing, we see it through."

"Commendable."

"Naturally we have occasionally met resistance, in the past, but have always overcome it."

"Encouraging for you."

Commander Roche felt red. But he smiled. He had not gained his position through influence, but through ability. "You agree, then, that we are justified in remaining here and developing the planet?"

The dots vibrated. He wondered what form of life they were, and how they communicated between themselves.

"Not at all, the box said.

He jumped. "You have misunderstood me! I observed that you must agree that we should stay here — "

"That was understood."

The Commander felt cold inside. "Then possibly I misunderstood your answer?"

"Apparently not."

Sitting in his office, Sam O'Connelley cursed the order that meant Valley City must be kept fully supplied. He felt that a five per cent. reduction in voltage there would noticeably ease the load. Stanhope Gulley was already drawing eight per cent. from the eastward grid, and had phoned that her heavy industrial load would have to be maintained a full four hours longer, so that her output would not become available.

He pressed a button. "Have Valley City contacted? Will they accept a five per cent. reduction?"

The reply came within minutes. "No reduction can be accepted. This is an order. Diplomatic Centre."

A phone rang. He took it.

"Grid beyond Newhaven East reported broken. This report is being passed to all stations."

Sam gnawed his lip, acknowledging. So the stations west of East Newhaven were on their own, he thought. There would be no drawing power from the generating plant now becoming relieved of demand as daylight came in that direction.

He wondered how Meriel was progressing. No further report had come.

The surgeon withdrew from the theatre into an annex where an orderly removed his mask and mopped his face. Even the radiograph had not shown the worst, Williams thought. They would need the fluorescent radiographical apparatus and deep

probes. There was one snag. The fluorescent radiograph would not operate on the hospital auxiliaries. It had been installed since their fitting.

Dr. Crofton came in. "You anticipate using the fluorescent radiograph and deep probes, Doctor Williams?"

"Yes, Doctor Crofton. How will she withstand the operative shock?"

"Moderately well, if not too prolonged."

"As I thought."

They were silent in a mutual understanding almost of communion. Williams thought of the woman's husband.

"Might Mr. O'Connelley like to be near her?" Crofton asked suddenly.

Williams summoned an orderly. After a minute he returned. "Mr. O'Connelley is chief engineer at the Eider Dam and kept at his post by priority work, sir."

"Thank you."

Time to re-sterilise and return to the theatre, Williams thought. His few moments rest after the long preliminary, but comparatively uncritical stage, was ended.

Surgeon and doctor moved as one to the annex door.

Sam swivelled in his chair and pressed buttons. The last hour had seen the load increase as cities westward began to draw power and the night shifts started. The peak load usually came about four to six hours after nightfall.

An engineer's voice came back. "The break in the power line has been located, sir, but will not be repaired until dawn."

"Why not?" Sam's voice was sharp.

"The spot is inaccessible, sir. It was located by a survey aircraft. Apparently a mailplane struck the lines."

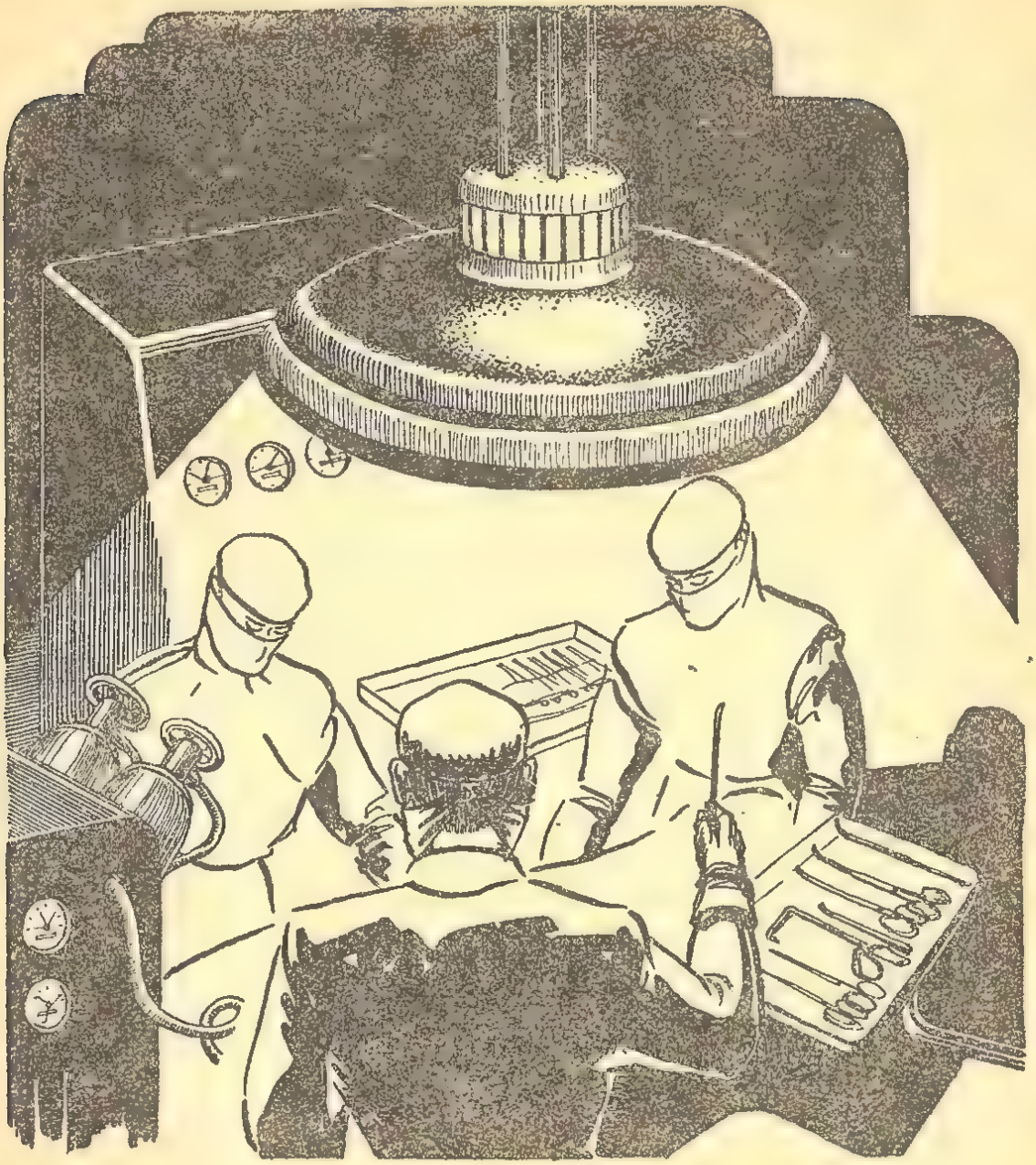
"Very well."

The power grids straddled miles of rocky wilderness. Probably gangs would not reach the spot until after dawn. Eyes on his meters, he phoned.

"Eider Dam Main Central to Stanhope Gulley. Can you reduce your demands?"

"Not without drastic load-shedding."

An undercurrent of panic was in the voice. Sam wondered whether that night's battle would be won. If the load exceeded the rated capacity of the system, automatic switching gear would come in. Cascade switching was every power-house engineer's nightmare. An overloaded system threw in an



adjacent circuit. That circuit, if already fully loaded, protectively threw in a third. The third, if unable to supply the extra demand, tripped into circuit a fourth, and so on while lights zig-zagged across the maps and the complex grids straddling the planet became progressively more and more involved in the chaos.

Sam wiped his brow. The 'phone rang. The girl's voice was new. Judith had ended her duty period.

"A gram from Medical Centre, Mr. O'Connelley."

"Read it."

" 'Can full rated voltage be maintained this night period—

Crofton and Williams'."

Sam thought of twenty things simultaneously. Of Meriel. Of a memo, still remembered, explaining that the equipment at Medical Centre had exceeded the rating of their auxiliary generator plant. Of cascade overload tripping, when five thousand miles of overhead landlines might become involved within minutes.

"Wait," he said.

He used a second phone. The reply came soon. "Diplomatic West cannot in any circumstances accept any power cut. This is a special order, effective for tonight only."

He replaced the phone. Another was ringing. "Stanhope Gulley to Main Central." The panic was audible now. "Present increase in load will result in a two-and-a-half per cent. overload within the hour."

"Noted," Sam said.

He took up the first phone. His face was white, his lips set. "Inform Medical Centre that the full rating will be maintained for them," he said.

"Yes, sir."

Wind piped over the burned-out mailplane wreckage. A craft had droned overhead, and gone. A single line-observation man had awakened in his hut backed against a slope in the rocky fastness and answered the radiophone. Grunting, he had donned protective clothing and gone out.

From a safe distance he stared at the broken cables, now sloping from tower to earth. Fifty yards ahead was a hundred-foot chasm, unbridged. Behind him lay twenty miles of rocky hills.

He walked carefully, bowed against the wind pressure. The girder tower sang mournfully. At last he went back. The wind slammed his hut door and the vertical rod antennae sang like an organ pipe.

He reported, then philosophically turned in. He personally doubted whether the repair gang would arrive by dawn. Meanwhile, sleep beckoned.

Commander Roche felt that his shirt was wet upon his back. Mentally calling the aliens seven green bottles helped not at all, now. Phrase by phrase they had halted his attack. Now he was on the defensive, almost in retreat.

"We are an amicable race, not given to attacking others pointlessly," he said.

The box was silent. Aides flanking the Commander rustled their papers.

"A friendly inter-relation between humanity and yourselves should be possible, for the mutual benefit of both," Roche observed.

"Indeed," the box said.

The Commander felt slightly encouraged. "You can rely upon our honouring any agreement — "

"An unnecessary assurance."

"Why?"

"Because your interference would in any case not be permitted."

Commander Roche felt hot. The words implied that the aliens regarded mankind as an inferior life-form.

"We could trade." He let the inference pass. "Possibly you require certain minerals—certain ores or raw materials—"

"No."

"Possibly information—medical or scientific knowledge."

"Your culture is insufficiently interesting and advanced."

This was not in the manuals, Roche thought. The aliens apparently wanted one thing only—that humanity quit the planet.

"Naturally we cannot contemplate leaving," he said firmly.

"Your agreement would not necessarily be required."

A direct threat, he thought. *The first*! He gazed contemplatively at the seven semi-transparent forms, each suspended a bare inch above the seats of the chairs. Their inner red dots oscillated, but never rhythmically. It was a random movement; or a controlled, conscious movement, as unrepeating as human thought.

He made a heavy noise in his throat, puffing his cheeks. "We are a branch of a powerful people. We have colonised many planets, despite opposition."

"So also have I," the black box observed.

Commander Roche looked at the clock. It was four hours since the aliens had entered the building.

"Fifteen per cent. voltage reduction is already imposed on the northern area," Stanhope Gulley said. "There was no other way to avoid an overload trip."

Sam perspired. "Eider Dam cannot withstand additional load. We're at maximum."

"Can't you draw from Cactus Point?"

Cactus Point was 40 on the list; Eider Dam 39; Stanhope Gulley 38. "No," Sam said. "I've rung them." If Stanhope Gulley tripped its load to Eider Dam that would be the beginning of chaos. *Thunk, thunk, thunk*—the overload trips would work as fast as that. Stanhope Gulley, Eider Dam, Cactus Point—and on and on in a sequence of cascade switching that might involve a score of generating stations in as many seconds.

That had happened once, Sam remembered. Half a continent had been plunged into darkness until morning.

"A call, Mr. O'Connelley," the girl below said through the desk communicator.

"Put it on."

"This is Diplomatic West." The voice was agitated. "I am speaking on behalf of Commander Roche. In no circumstance is power to any section of Valley City to be reduced."

"S I understand previously." Sam felt sarcastic.

"This is double priority in addition to previous orders."

"Trouble?"

There was a pause. "The aliens are proving—*intractable.* Commander Roche feels that any reductions in power will demonstrate technical unpreparedness, and hence weakness."

"I see."

The other phone was ringing. A young, concise voice sounded, new to Sam's ears. "Dr. Crofton and Dr. Williams have asked me to contact you, Mr. O'Connelley."

Sam tensed. "Go ahead."

"Prolonged deep surgery will be necessary for some time yet. I was to point out that the fluorescent radiograph will not operate on auxiliary supplies. It is hoped that you will be able to maintain the supply — "

"And if I don't?" Sam asked, eyes on his meters.

"It will be difficult for us, Mr. O'Connelley. "Deep instruments have been inserted. Their manipulation would become impossible, their withdrawal dangerous."

As bad as that, Sam thought. He seemed to see Meriel, so vividly alive; but so deathly still, last time.

"Naturally, Dr. Crofton and Mr. Williams would do all they could." The voice was reverent. "But the condition of many vertebrae is critical. Any hindrance could be—dangerous."

"Thanks."

Sam gazed at the wall map automatically. The night band had moved many, many miles westward. Meriel, he thought, deathly still. Factories west would be coming into evening production. That half-ton swinging block had been nobody's fault. His eyes went to the clock. Another half-hour would see the peak demand.

"They asked for full production and they'll have it," the floor steward declared. "Eight hour rest period cut to four. Who will grumble if we can service the plant in two hours? Not the bosses! Nor the men. They'll get paid. They'll like the extra!"

He stuck his hands in the pockets of his overall. Machine tools beyond counting hummed, screamed and roared in the half square mile of factory. Lights glared on busy men. The works-manager rubbed his hands. Usually he did not descend from his office.

"Excellent!" he said. "Keep it up!"

He turned, anxious to be gone from the clatter. A girl met him at the corridor entrance.

"A phone call from Stanhope Gulley, sir."

"Never heard of them."

"I gathered it was important, sir."

"Very well."

He rolled along to the comfort of his office. The call had been put through. He let it wait, lighted a cigar, puffed, then took up the receiver.

"Stanhope Gulley power-station here." The man had obviously been waiting.

"Yes?"

"Could you accept a reduction in voltage? We are having difficulty in meeting the load. It was noted your peak demand began early, cutting down our margin."

The works-manager snorted. "Isn't production important? Aren't we doing our best in difficult conditions?"

"But, sir — "

"And you can't do your bit your end!" The snort materialised like a horse's sneeze. "I shall register a personal complaint if there's a power cut! We pay well enough — "

"But — "

"Bah!"

He hung up, feeling triumphant with justified wrath. "Some silly switchboard fiddler!" he stated aloud. "Wish he were on

my staff a few months—I'd liven him!"

He subsided more comfortably into his chair, puffing angrily.

Sam knew that the choice which had been forcing itself upon him was near. He had seen it, had anticipated it—but been unable to make a decision. He hoped the replies to his messages would provide a solution.

"Mr. O'Connelley?" It was Judith back on the communicator.

"Yes?"

"Reply from Medical Centre in."

"What is it?"

"Operation will not be terminated for at least an hour."

Half his chance gone, he thought bitterly. There was a pause, then: "Answer from Diplomatic West has just come in, sir."

"Give it."

"The discussion is not expected to end for some hours."

"Thanks."

He sat motionless, brain active. Was Meriel's life to be sacrificed on the altar of Roche's diplomacy? Did *many* human lives depend upon Roche's success?

Loading was reaching a peak which could not be met. If he delayed his decision automatic overload protectors would take over, cascading into a chaos which would probably plunge both Valley City and Medical Centre into darkness.

His lips a thin line, Sam put a finger on a switch button. A tiny pressure here, and great oil-immersed contractors in the power-house would slam over . . . The muscles of the finger tightened. If Medical Centre had power, it would save Meriel's life. But there was a duty to one's fellows, too . . .

"That will be very satisfactory," Commander Roche said. He stood aside as the seven bobbing cores drifted as one into the craft. The black box followed them, and halted.

"I had looked upon bio-chemical life-forms as inferior," it said. "Naturally I apologise. That error arose from my lack of information."

"Your ignorance was understandable." Roche felt superior, now. "We pardon it. But in future, you will know better."

"Assuredly."

The box was withdrawn through the transparency and the latter became opaque. The globe rose like a soap-bubble.

Roche breathed unevenly, still unable to believe in his triumph. Back in his office, alone, he took up the phone. "Put me through to Main Central power-station."

He knew that he himself would get a medal; he wondered if the man at Main Central would. It was deserved. But he would not get it.

A girl answered. "Main Central here."

"I wish to speak to your chief switchboard engineer."

"He's left, sir. An assistant is in charge."

"I—I wished to speak to him personally."

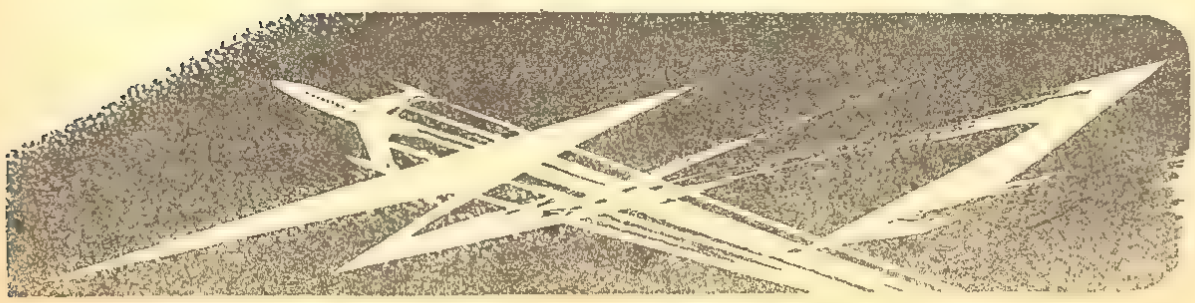
"He's gone to his wife, at Medical Centre. Can I take a message?"

"No—no, I think not."

Commander Roche sat motionless, phone cradled. Alien life-forms would never fully understand Man, he thought: nor would Man understand aliens. The dissimilarities could be too great. His visitor had been amazed. Men acted and thought for themselves—were *individuals*. They did not necessarily follow instructions. That proved they were free-thinking. The alien was *one*; non-free-thinking. That entity had realised the superiority of beings that were multiple, independent, so that millions of individuals made up one whole. There were differences. When one entity divided into seven—or a thousand—it was still one, non-free-thinking, non-individual, still merely "I" . . .

Commander Roche poured himself whisky, fumbling in the light of the single hand-lamp that stood on his desk. Outside, the city was silent in total black-out.

THE END.



They were just seven rather strange looking canisters—something new the enemy were using, no doubt. But the Bomb Disposal squad found them too hot to handle.

CROSSFIRE

By James White

Illustrated by HUTCHINGS

Cotrell sat on the loose earth at the crater's rim and watched the tank close up to point-blank range. It was one of the newest and deadliest models; a shell from its main gun could knock a hole through four-inch armour plate with no trouble at all. That main gun was already loaded, and was now pointed directly at Cotrell. They couldn't miss him.

But they couldn't hit him either.

No doubt they would reload and try again, and they would keep on trying. Just like the machine-gunners back of him, and the two light tanks and the scout car over there on the right. If persistence was a virtue, he though, then these guys would very shortly be saints. Such trouble they were going to in order to wipe out just three men, but he supposed, a little cynically, it was the principle of the thing.

Cotrell sighed and looked over at Nelson, who was lying propped on one elbow and watching everything with a show of interest that fooled nobody. He was scared stiff. Beside him Corporal Barnes lay flat on his back, breathing slowly and

economically, the way they're supposed to do on wrecked submarines. He did this because the air in here was stale, almost unbreathable, and that was the proper thing to do. Barnes was very practical.

If only one of the shells would get through and end everything quickly, before the slow, painful death from suffocation that was so surely coming. Cotrell glared again at the four-foot silvery torpedo lying a few yards away which was the cause of all this mess and wished fervently that he'd never heard of it. But he knew, if he had the choice to make again,

he would go through with it in exactly the same manner. Those torpedos had turned out to be something rather special.

They had been first sighted by a returning patrol. Then a bomb-disposal unit had gone out to look them over and, if necessary, to pull their teeth. Six hours later the unit returned, the men wearing looks of extreme bewilderment and refusing even to mention the job to anybody at all. Nobody likes being called a liar, a drunk, or mentally deficient, so they clammed up and discussed it only among themselves. Their officer, on the other hand, wanted most desperately to talk about it. He grabbed a jeep and scorched off to see his C.O. He kept muttering to himself as he rode; he was a very shaken man.

The C.O. listened to everything he had to say with quiet attention. One would never have guessed, by his expression at any rate, that he was believing perhaps one quarter of it all. In his most gentle and fatherly voice he told the near-hysterical officer to dismiss and take it easy for a bit; then he began to think. Eventually he decided to play it safe and refer the matter up. Maybe the enemy *had* a secret weapon after all.

In jig time a lordly Major from Weapon Research arrived. He took a handful of technicians and about every portable testing device known to science out to the scene of so much mental anguish to settle the matter for good. He was very thorough—his report later was easily half an inch thick—but he too was completely baffled. This worried him, because up until now at any rate, he thought he knew his stuff. There was only one thing to do. Very politely and through the proper channels, he too, screamed for help.

Help arrived in the persons of Lt.-Colonel Richard Cotrell and Captain William Nelson. Cotrell was a tall, rangy individual with the characteristic lines of asceticism, or maybe ulcers, around his thin-lipped mouth. He spoke like a schoolteacher. Nelson was the small, nervously active type who seem in a perpetual state of extreme worry. He wore rimless glasses, but he never worried about anything, in fact, he had quite a sense of humour, which only goes to show. Both wore their uniforms with the awkward air of the civilian scientist who would much rather have flannels and a lab coat, for they weren't regulars, but had been roped in by the Army

to do some very hush-hush research.

Cotrell asked for six experienced men to form an escort for their protection in case they were attacked, and to tote some of the equipment. He could have asked for a full company and got them with no trouble at all, but he thought a small force would stand a better chance of doing the job unobserved. And it was very necessary that they do it unobserved, for circumstances pointed to the fact that the enemy was unaware that several of their secret weapons were lying in No Man's land, defenceless against the prying instruments and keen minds of hostile scientists. Up to now, though, the things had proved to be anything but defenceless, and the 'keen minds of the scientists' had seemed something less than razor sharp, but the General was confident that Cotrell would find the answer. While he was finding it, however, just to be on the safe side, he was to maintain strict radio silence.

The General had also said he was a nice guy and a very important person to his department. He didn't want him leaving his brains lying on the ground somewhere, so remember to keep his head down — but find out what those blistering things were, and what the blue blazes they were meant to *do*. So far they didn't seem to do anything at all.

So Cotrell and Nelson, with their sweating, heavily-laden bodyguard, went crawling out to discover what the torpedos were and what they were supposed to do.

The original discovery had been made in a little area of rocky, broken ground surrounded on all sides by flat near-desertlike country that was just the thing for tanks but gave very little cover for men trying to efface themselves. This rugged jumble of rocks had been used often by both sides as an advanced observation post, and as a place for raiding parties to take cover. But that had been long ago. Now the big guns of both sides had its range to a T. At frequent but irregular intervals, just on general principles, they would plaster it, so the place wasn't popular any more. At the moment, however, it was peaceful.

Cotrell had no difficulty in finding the upturned enemy truck with the silver torpedoes scattered on the ground beside it, and the deep bomb-crater nearby that from which the previous investigators had worked. It was an old crater, with grass growing in patches on its walls and floors. As craters go, it was fairly comfortable. They began sorting out their gear

while the escort distributed itself around them in a wide circle and began waiting for something to happen, all the while hoping, of course, that nothing would.

Then the two officers crawled up to the rim and took their first real look at things.

The enemy truck had been shot up from the air. It was lying on its side, burned out, a total wreck. The seven silvery objects lay close together about ten yards from the truck. There were also a few empty metal canisters lying among them, but these had been proved innocuous. The nearest torpedo gleamed brightly in the sunlight less than three yards from the crater's rim.

It was about four feet long, and made from some highly-polished metal that seemed to be a perfect reflector. The nose came to a smoothly-rounded point. The tail, which was bare of any of the usual guiding vanes or detonating devices, was also smoothly-rounded except for a small flat area at the extreme end. This was about the size of a penny and was painted black. There were no other surface markings.

When they had studied it for a few minutes in silence Cotrell shook his head in puzzlement and shrugged fatalistically. "Better make a start, I suppose," he said, "You stay here and reach me the stuff while I take a closer look. Okay?" He scrambled up over the rim and lay flat beside the torpedo. At intervals he called for various items of equipment which were handed up to him. Test meters and other enigmatic devices made a growing pile around him on the ground, but he was getting strictly nowhere. He shook his head in bewilderment. One would almost think this . . . this something or other was placed here for the sole purpose of driving technicians into nervous breakdowns. He gave up for the time being in disgust and slid back into the crater.

"Well, what is it?" asked Nelson, then he caught the other's expression and ended, "Oh! You don't know."

Cotrell took off his helmet and flung himself down beside the other. "No, I don't know." His voice was perplexed. He looked completely baffled as he went on, "But Major Thompson was right. It doesn't seem to be a bomb. It's too light to contain enough H.E. to do much damage, and if it's an empty I can't find the slightest trace of a filling valve. And the thing must have been put together by a watch-maker. There isn't a single join anywhere on its surface that I can see."

He paused, thinking. He was beginning to understand just how the Major who had preceded him had felt after spending four hours with the thing. But he, unlike Thompson, couldn't very well pass the buck.

He continued, "I didn't find the skin heating up suddenly the way he did, but then he tried to carry it away with him, whereas I only rolled it over a few times. Apart from that everything checks exactly with Thompson's report. Incidentally, I saw one of his asbestos gloves. It was almost burnt through, so it seems certain that it *did* get red hot when he lifted it. Up to now I thought he'd been exaggerating that part of it a little."

A shell landed with a crash less than a hundred yards away. Nelson winced and Cotrell reached hurriedly for his helmet. They both looked a trifle shame-faced. Thev weren't used to being this close to the war. Cotrell began speaking again.

"I did find out a little more about it. Maybe it will mean something to you, I can't make a thing out of it." He pulled out a soiled notebook and consulted it. Then he stated, "The skin is made of some extremely hard, non-magnetic metal and is between one eighth and one quarter inches thick. There are also traces of metal, some of it magnetic, at about thirty separate points inside the shell. These small masses of metal are all grouped on, or very close to, the longitudinal axis of the thing. The remaining volume seems to be empty, but as the detector doesn't work on non-metallic material there could be a gas, or a liquid, or a plastic structure of some kind occupying it.

"There is a flat, black, metal disc with a thin white line around its circumference, set flush with one end. I thought at first it was a colour code painted on, but it is definitely metal, very warm to the touch and pitted as though from periodic heating. It is also faintly radio-active. Nothing harmful, mind, but just barely detectable." Cotrell slapped his notebook shut, looked up at Nelson, and grinned, making a joke of the whole thing. He stated, "We have here a hollow, closed cylinder with a metal rod of irregular thickness running down its centre, which is slightly radio-active. Now, would the bright boy facing me please stand up and tell the class what it is?"

Nelson thoughtfully cleaned his glasses, then, replying in kind, piped, "Please Sir, it could be anything—and if I stand

up here I'll get a hole in the head."

"You're a big help," the other's tone was scathing. "And," he ended cuttingly, "That was the general idea."

They were both giving the matter very serious thought even though their cross-talk seemed to make light of it. After Nelson had spoken gloatingly and at some length of just how glad he was that HE hadn't been given charge of this job, he became serious again.

"Does it make a noise?" he asked. "Any ticking or humming noises? It might be some sort of time-bomb."

Cotrell shook his head. "With all this shooting going on around here I couldn't be sure. But there did seem to be a low, irregular ticking, like the sound mice might make scampering about on a tiled floor . . . " He stopped suddenly and grew visibly pale. Then in a low, shocked whisper said, "Oh, no."

"What's up?" queried Nelson, then he too, realised the implications of the other's words. Unconsciously he wriggled his shoulders as he protested, "A Bacteriological Bomb. But that's impossible. They wouldn't dare . . . Still, maybe they would." He grimaced in disgust, "Augh, I feel lousy already."

"We can't be sure of that yet," said Cotrell quickly, I'll have to take another look. Have you got a magnifying glass?"

Naturally a magnifying glass was about the only thing they *hadn't* taken with them, but Nelson liberated a pocket flashlamp from one of the escort and the crude lens from that had to do instead.

For some time now gunfire from the enemy positions had been steadily growing in intensity, and there was considerable air activity as well. With increasing frequency low-flying jets flashed screaming across a sky already streaked with the filmy vapour trails of high-altitude bombers. It looked as if something was afoot. Cotrell, again sprawled alongside the nearest torpedo, could scarcely make himself heard above the din. He was examining minutely the surface of the thing with the glass, and calling out his findings to Nelson who was taking everything down. Details of the black metal disc came first, followed by a description of the white circle around it, which seemed to be a hard plastic. Then he tried to see how the shell as a whole was put together.

At first he had no success, then, "Willie! Willie!" he called excitedly, "Get this down quick. *I can see inside.* The first

eight inches back of the nose have gone transparent, just like that. Don't know what caused it, but I can see right in . . . "

Just then something landed nearby with an earth-shaking crash and a few fair-sized rocks came bouncing into the crater. Over the ringing in his ears Nelson heard the other's voice jabbering away as if nothing had happened. He shook his head to clear it and wished his shorthand was faster or that Cotrell would slow down.

" . . . Tiny, complex mechanisms linked by hair-thin wires, but so *small.* Our micro techniques can't touch this at all. It seems to be divided into thin-walled compartments of different

sizes . . . Oh, why can't I have a decent lens, everything blurs and jiggles around . . . The inside is filled with a yellowish gas, and in the nose . . . Wait! Something moved. It's a snail, no, two snails. But they're going too fast for snails. Maybe . . . "

Something, he couldn't say just what, made Nelson look up. The plane was still quite high, but it was moving awfully fast, straight down. There could be no doubt whatever at whom it was being aimed. Cotrell was yelling, "It's not a bomb. I know what it is now. I can't believe it, but it's a . . . " Nelson screamed a warning to take cover but it was drowned in the mounting roar of engines. He did the only thing possible. He reached way out, grabbed an ankle and hauled Cotrell frantically back into the crater. He was just in time.

With a high-pitched *whoosh* the plane loosed a rocket. They heard it coming, then something tried to push them into the ground and shake them to pieces at the same time. They were deafened, blinded by dust, pelted with falling earth and stones, and a large, jagged-edged chunk of metal dug a hole in the ground three inches from Cotrell's ear, but they were both unhurt. They lay still for a few minutes, trying to convince themselves of this.

The plane didn't make another pass at them, and they heard it roaring off into the distance. After a while the sergeant heading the escort began calling names to see if anyone had copped it. Nobody had. Nelson raised his head and looked hard at Cotrell. Picking his words with great care, he said:

"I realise there was considerable noise and confusion when I dragged you in just now. Probably I didn't hear you right, but I could swear you said the word 'Spaceship.' Am I suffering from an auricular condition, or is that what you said?"

Cotrell sat up. His face was dirty and there was a lot of skin missing from his nose and chin as a result of his being dragged on it across several feet of very rugged terrain, but apparantly he could not even feel it. His eyes shone with excitement, "That's right," he affirmed. His voice was exultant, almost exalted. "*Spaceships.*" Seven of them. That's all they could be. It explains everything. The sudden transparency of the nose. The tiny machines, controls, wiring, little creatures working at things. They're spaceships, I tell you. An extra-terrestrial life-form, and *intelligent.*" He stopped, his mind leaping ahead, trying to grasp what this single great fact would mean to humanity. Then in more normal tones he con-

tinued, "Go see for yourself. Here's the glass, take a good look . . . Oh."

"What's wrong?" called Nelson, seeing the other's expression change to one of dismayed apprehension. He was already half out of the crater—he didn't believe it, of course, but he was very eager to see just what *was* coming off here.

"That rocket," Cotrell asked tensely, "Did it hit them?"

"Nah. It landed on the other side of the truck," answered Nelson. Then a puzzled note crept into his voice as he went on, "Funny, it was headed right for us, too, then it sort of wobbled and sheered off. Guess we're just lucky, I suppose." He wriggled away, and was gone for some time. When he came back he looked a bit sick.

"Well?"

Nelson nodded and said grudgingly, "I suppose you're right. They could be spaceships, manned spaceships." He shuddered involuntarily, "Maybe 'manned' is the wrong word. Ugh, those shiny wet lumps. And those pink hairs growing out of them and curling and writhing about. They're sickening. Whatever planet they come from they must have lived under its rocks—its slimiest, dampest, mouldiest rocks. I don't like them at all."

Cotrell was pointing out heatedly and at some length that Intelligence was the important thing, and not the body that housed it, when the sergeant called softly to say someone was coming, and suggested that they keep deathly quiet just in case it wasn't a friend. Cotrell said, "Thank you, Sergeant," and shut up.

Shortly afterwards they heard a low-voiced exchange of pass-words, then a corporal in a rather soiled Medical Corps uniform rolled in beside them. He must have been a regular, for while crouching on hands and knees he still somehow gave the impression that he was standing rigidly to attention as he said smartly, "Corporal Barnes, Sir. Message from Field H.Q. Very urgent." He handed it to Cotrell. While it was being opened he turned to Nelson and volunteered, "They sent me with it in case anybody needed a patch. Does anybody?"

Nelson told him no, they'd been lucky so far, but to check with the sergeant and make sure. Then he looked quizzically at Cotrell, "Someone seems mighty concerned about our health," he mused, "fancy sending a Medic."

Cotrell didn't hear him. He was reading aloud from the

message. "It's from the General, relayed by hand due to the radio silence order. He says he hopes it reaches us in time. Says the enemy is pushing forward. Nothing serious, but our guys are pulling back temporarily, and that this position has been by-passed but is now almost encircled by enemy armour. Whether we've solved the problem or not we've got to head for home before we're completely cut off. Says to drop the whole thing, he'd rather have a couple of live boffins than two dead heroes, and that that's an order. He also says a counter-attack is being mounted and will begin in four hours, and we'll have another chance maybe when we re-take this area. Meanwhile come back at once." He stopped and looked at Nelson distractedly. He crumpled the message viciously and burst out, "But I can't leave. I just can't. Not now."

Nelson was sympathetic, "I know how you feel. This sort of thing doesn't happen very often," he said, making perhaps the greatest understatement of all time, "But orders are orders. And besides," he reasoned, "it's only a matter of time before the enemy mops us up. So far we've been lucky, but that plane must have reported our position. There'll be tanks along, or they'll plaster us with shells any time now. Unless we want to stay here permanently we'd better don our skates and get out of here, fast."

Cotrell looked at him unhappily. He was insane for hesitating even an instant. "I know all that," he said, "But don't you realise we're about to make contact with an intelligent race from another planet, probably from another star system. I know they're little crawling horrors, but we just can't up and leave . . . "

"Now look," Nelson broke in, "I'm as broadminded and tolerant as the next guy. I shake hands with the strangest people, and cadge their cigarettes. You get to be that way in this war of ours." He gestured at the sergeant who was wearing, in addition to his usual equipment, a vicious-looking machete and an imposing black beard, and whose face was several shades darker than midnight. "But I won't hang around and get knocked off to no purpose, and I won't let you do it either. And tell me this, how do you expect to communicate? And how can they possibly reply? We'd better pack it in and go before the shelling starts."

Cotrell was silent for several minutes, trying to think of words to put his feelings across. Then, his mind made up, he

spoke, "Try to look at this thing objectively. A number of aliens have landed on Earth, the first time in history that this has happened. Unfortunately they landed in the middle of a battlefield just before battle was due to commence, a very bad choice of a landing spot. They took positions beside some metal containers which resembled them roughly in size and shape. Not knowing their thought processes it is impossible to say whether this was done through curiosity or in an attempt at camouflage, or maybe it was a rendezvous point or something like that. Now, the natives, that's us, come to investigate and they reveal themselves. But because we have been seen by other natives who don't like us and wish to kill us, these creatures are shortly going to be blown to smithereens while we go off scot free."

"But . . ."

"Now I think this is wrong. I think we're — well . . ." he hesitated, then went on defensively. "You'll think this silly, maybe, but I feel we are responsible for their safety. This isn't their war. They don't know the score." He paused, then apologetically but very, very stubbornly he ended, "They must at least be warned off before we leave."

Nelson didn't answer. He had known Cotrell for several years as a very likable sort who hid a shy disposition behind a very efficient wall of tough cynicism and bitingly sarcastic wit. Not the sort of crazy fanatic to pull a trick like *this*. He was uncomfortably aware, moreover, that the other was morally right, but this place would shortly be a crashing hell of erupting earth and red-hot flying steel. Even in this mad world Nelson's life was very precious to him. But he too, was curious about those aliens. He'd like to know just why they'd come . . . He brought his attention back to Cotrell, who

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was speaking again.

"The General wants his two pet geniuses back. Well, we'll let him have one of them. You. Half a loaf, and so on." He broke off and grinned, "Hope you don't mind being called half a loaf." He went on, with forced lightness, "I'll stay behind and scare away our friends, somehow, then I'll follow after you." He called abruptly, "Sergeant!"

Nelson began a protest, but the other was already giving his orders. Cotrell told the sergeant that the area would shortly come under heavy fire. Captain Nelson, the sergeant, and his men were to return at once. He had something to do and would follow them when he had finished it. The sergeant nodded and consulted the corporal quickly about the best route back. In minutes his men were on their way, crawing rapidly, but using every possible scrap of cover. The sergeant hung back, waiting for Nelson.

Nelson couldn't say a word. For the first time in his life his friend had pulled rank on him, and it was because of that friendship that he'd done it. He gripped Cotrell's arm awkwardly and mumbled something about being careful and scrambled away after the sergeant.

It was then that Cotrell saw that the corporal was still in the crater. "What are you waiting for?" he said sharply. He had a lot on his mind.

The corporal. it seemed, was waiting for him. He had been told just how important both technicians were, and he was not to return without them. This had been stressed by his C.O. His C.O. had the reputation of frequently eating his young. His C.O. was a real tartar. He dare not go back without Lt. Colonel Cotrell, and would he be long in finishing up?

The corporal was inclined to argue at first, but finally a shoulder-full of dirty yellow pips glared hard at two lowly chevrons and he too, departed.

He was back five minutes later, looking apologetic but very determined. Nelson was with him.

Nelson began defensively, "A body could get killed out there. No cover. I can't be expected to hide behind pebbles like those other guys, I'm not used to it. Besides," he finished lamely. "I wanted to see what you were doing."

Cotrell gave him a look that told him that he was a liar, a suicidal maniac, and the best friend a man could have all rolled

into one, but all he said was, "I haven't done anything yet. I'm glad you did come back, maybe you can help me think of something." He was hiding his very real feelings by being studiously casual and off-hand about the whole thing. He didn't fool Nelson. Turning to the corporal he said lightly, "We'll probably need you before very long, too."

The corporal said "yes sir" and began fiddling absently with the straps of his haversack. It was the one conspicuously marked with a large red cross.

There was a lull in the gunfire, but that didn't mean anything. It would start again any minute with redoubled intensity. Cotrell and Nelson began discussing the aliens' possible systems of communication. Obviously they couldn't hear very well or the noise would have frightened them away long ago, thought Cotrell, but the transparent covering of their control-room made it seem certain that their eyes operated in the visible frequencies. Nelson asked about vibration, and surely they could *see* the shells falling? Cotrell replied that they might think the vibration was natural volcanic activity. He didn't know why they couldn't see what was happening, but they were certainly completely unaware of their danger. After that he bogged down. The corporal broke the perplexed silence in a low-voice.

"In any stories I've read they always have telepathy." He seemed to be talking to himself.

Nelson, who was lying nearest, regarded him with pleased wonder. He would never have suspected the corporal of having such good taste in reading matter. His estimation of Barnes rose appreciably. Cotrell hadn't heard the remark. Eyes shut and fingers stuck in his ears he was trying desperately to think. Suddenly he exclaimed:

"I think I've got it. How's this. They can see all right,

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but being so small their field of clear vision is restricted to say, six feet, so that anything happening beyond that distance would appear so hazy or distorted they wouldn't know what it was." He began climbing out of the crater, "I can test that idea, anyway."

For a while there were scuffling and grunting noises as he scrambled about among the nearer torpedoes, then he re-appeared, eyes bright with excitement, and panted, "They can see. I tried different objects . . . varied distances . . . Slide-rule, cigarette lighter, a pencil. I moved them around. They turned their . . . their . . . Well, they all looked at them. They can see. Maximum range seems to be about four feet, for small objects like the pencil, eighteen inches." He broke off and shook his head despairingly, "But how are we going to tell them to go away?"

It was a very good question. They began batting their brains out anew. Shortly the corporal cleared his throat, "If we could draw some kind of picture," he suggested diffidently, "Maybe . . . "

Nelson snapped his fingers, "Corporal, you're a genius," he enthused, then turning to Cotrell, "That's *it*! Don't you see. We draw them pictures—before and after pictures. First show ships lying peacefully, then shells falling, show ships in little pieces. Also show them taking off safely. Make the sketches simple, with clear, black lines. Stick those in front of their eyes, that should scare them away all right." He went on breathlessly, "Have you got the lab notebook?"

Cotrell nodded quickly and began tearing out the large, stiff pages. They sketched furiously, discarded, and sketched again. The finished work would never have been hung in the Tate Gallery, but they hoped it would do. The page showed three simple pictures, with a symbolical sun in each giving them a crude time sequence. Rapidly they made two copies and crawled out among the alien ships.

The noses of all the ships were now transparent. Each held his sketch up close for a few minutes, then moved to the next one. They kept circulating among the ships. Shells began falling again, uncomfortably close, and there was the distant roaring, rattling sound that could only mean the approach of an armoured column.

Suddenly Nelson bellowed something above the din and pointed vigorously. One of the ships was floating gently up-

wards. As they watched the black circle in its stern glowed cherry red. There was a hiss and a smell of ozone and the ship flashed upwards out of sight. Five others followed it in less than a minute. The men cheered raggedly. Only one ship remained—the one nearest the crater. It showed no sign of moving.

With desperate haste Cotrell propped his sketch up before it and dived for cover. The area was taking an awful pasting from the guns now. It was one continuous eruption. The ground heaved and shook beneath a merciless rain of H.E. Earth and stones battered at them viciously. The crater wall on one side crumbled nearly burying them. A twisted, blackened wheel from the wrecked truck flopped down, narrowly missing the corporal. The noise was a monstrous, incredible thing that tore and hammered at their cowering, puny bodies. They knew without a shadow of a doubt that they could have only minutes left to live, then suddenly—just like that—it stopped.

It wasn't just quiet—it was utterly, deathly silent.

For a long time they couldn't move, then Cotrell dragged himself up to take a look. The other two heard him gasp. In a voice that shook with some indescribable emotion he called for them to come up. When they saw that he was outside the crater and that nothing had happened to him, they climbed out and stood beside him.

They found the force-field to be hemispherical in shape, perfectly transparent, and impenetrable to everything, including sound. It was approximately fifteen yards in diameter, and felt like warm glass. At its geometrical centre was the alien ship. Outside, the earth was still being torn up and flung violently into the sky. In here it was as quiet as an

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empty church.

Cotrell stood over the tiny ship, his features working through a whole spectrum of emotions. Unsteadily, he choked out, "It stayed behind to save us. One good turn deserves another. Don't you see, they're grateful." His voice broke, "Imagine those . . . those snails doing a think like that."

The corporal nodded wordlessly. "Yeah," Nelson said solemnly, "It makes you think." Then he gave a sudden relieved giggle, "What are we all *whispering* for?"

They didn't know, but unconsciously they kept on doing it.

They were still discussing it in hushed tones two hours later when a couple of light tanks pulled up a hundred yards from them and began shooting. They stopped talking to watch. After a while an officer climbed out of one of the turrets to see why his shots weren't having any effect. When he hit the screen he stepped back quickly, his face going grey. He drew his pistol, took careful aim and fired. Barnes put his thumb to his nose and spread his fingers in the universal gesture. For a moment they thought the officer was going to burst into tears, but instead he wheeled suddenly and sprinted back to his tank. It opened fire again.

About twenty minutes later the firing ceased. Thirty men came forward in ragged line abreast and closed in around the screen. They were extremely hesitant at first. They poked it with bayonet points, battered at it with gun butts, then stepped well back and hurled grenades at it. Finally they grew tired and sat down and waited for somebody to think of something else.

A scout car came rocking and bumping along over ground pitted with newly-made craters. It was a half-tread job mounting a great brute of a machine gun. Two officers—judging by the beautiful way their uniforms fitted, very high rankers indeed—stepped out and came forward. They had the bright idea of digging under the screen and coming up inside. No luck. The force-field proved to be, not a dome, but a sphere. They began shouting and waving their arms about, but to those inside they made as much noise as a cat tramping across a deep pile rug.

It was about then that Cotrell noticed how stale the air was becoming. He mentioned it aloud.

Nelson and the corporal had been fairly killing themselves at the antics of the enemy officers, pointing and pulling faces

at them and going off into gales of uncontrollable laughter. Their abrupt change of expression, in other circumstances, would have been comic. They sobered instantly. Barnes lifted his arm and carefully took his own pulse, then he did the same for Cotrell and Nelson. He nodded gravely in verification, both pulse-rate and respiration were way up. They were breathing too much $C.O._2$.

Nelson was silent for a long time, then he muttered bitterly, "It was too good to be true." He turned to the corporal, "How much time have we got before we - - we . . . ?" He didn't finish the question, there was no need to. They were all feeling the smothering, choking sensations of imminent suffocation already, and even though it was purely psychological as yet, it was bad.

The corporal guessed somewhere between two and two and a half hours.

"There must be something we can do," Nelson burst out desperately. "We can draw more pictures, maybe. Show them the fix we're in. I know we can't do without the screen, we'd be blown to bits in seconds, but maybe they could put a hole in it or something. I'm going to try it." He snatched up the notebook and sketched rapidly, tore up the result

ARTHUR C. CLARKE

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viciously and started again. Better this time. He waved it briefly at the others and almost ran over to the ship.

But the ship's nose was no longer transparent.

Nelson lost his head then. "Open up, last you," he screamed, and beat at it hysterically with his firsts. "Look! Look at this!" he entreated, but there was no change whatever in the smooth blank surface of the ship. In a sudden rage he grabbed it in his hands and shook it violently. It's hull suddenly went red-hot. He dropped it with a yelp of pain and aimed a kick at it. "You're not saving us, You're killing us, d'you hear, *killing us.*" He was nearly in tears, "I was nearly drowned once when I was a kid. It was awful." Then he quietened down a little and said slowly, accusingly, "Know what I think? I think you're doing this deliberately. You *have* telepathy. You're doing this to torture us, get our reactions. And when we're nearly dead you'll come crawling out and . . . and . . ." He choked off into silence.

Cotrell felt slightly embarrassed and very sympathetic, he was close to screaming himself. Barnes looked at the ground and rebuked Nelson gently. "That's a very *corny* theory, Captain," he said. The bantering tone had the desired effect. Nelson grinned shamefacedly and forced a shaky laugh, "I don't *really* think they'll come pouring out at us with ray-guns. Maybe I read too many of the wrong stories."

After that they took it quietly. Outwardly, at least, they were resigned to their fate. They agreed to conserve the air as much as possible by sitting or lying down and cutting out unnecessary conversation. Barnes made brief mention of morphia tablets he had in his pack, but either they didn't believe in suicide or they were hoping for a miracle. Probably it was a little of both. Cotrell didn't know how the other two felt, but he was scared sick. Scared both at the thought of dying and at the agonizingly slow asphixiation that would precede it. To take his mind off things he began to observe the enemy movements. He passed a long time that way.

Another tank rolled up, a heavy this time. It didn't stop until it was very close indeed. Smoke puffed from the turret and there was a soundless explosion on the screen. After a while it all became a little monotonous. The machine-gun on the scout car kept up a steady fire, always directed unerringly at one and only one point on the force-field, trying, he supposed, to wear it away by sheer friction. He could see the

steel-jacketed bullets bouncing off it in a flickering grey blur.

Suddenly, silently, the scout car bulged outwards and flung its roof away as it took a direct hit. The men beside it dropped flat. Some of them stayed that way, the others scattered frantically for cover. The tanks loosed off a final salvo, churned into reverse, and left in great haste. The counter-attack had begun.

The ground outside was again ploughed and torn up and flung about, this time by their friends. But Cotrell couldn't see it very well. Great dark spotches floated before his eyes as he fought desperately for air. If the bombardment would only stop, he thought, there might be some hope. But how could the aliens possibly distinguish between enemy and friendly high explosive. He sobbed in sheer frustration.

Suddenly his attention was drawn to the corporal. They had all perched on the crater's edge where the air was a little fresher. Now Barnes was struggling to get into the crater, and the air down there was dead, rotten. Cotrell reached out to stop him, but he was too weak. Then he saw Nelson trying to crawl in as well. He gasped a warning and fought himself to his hands and knees. Didn't they know they'd die in that foul muck down thert, he must get them out. Then he froze in blind, panic-stricken horror as an indescribably inhuman *something* engulfed his mind and stated coldly, "*You will enter this surface depression for your safety,*" and he found his limps moving him to the edge, and he, too, rolled flabbily to the bottom of the crater.

He couldn't think what this meant. His eyes were open but everything was dark. He must be very nearly dead, he thought. He felt Nelson struggling feebly beside him, and gasped weakly, "They had telepathy all the time, the dirty—" But he didn't finish it, for with devastating suddeness sound returned. Roaring, crashing, tearing, carsplitting, beautiful sound. And with it came a blast of lovely dust-filled fresh air. The force-field had gone.

The alien ship, its tests completed, hovered momentarily above the three men now lying safely in the deep crater before it flashed upwards to rejoin its flotilla. Surveying was a pretty dull job, the Commander thought, routine for the most part, but occasionally they would come upon a quite interesting planet.

THE END.

Prelude to Space by Arthur C. Clarke.
Sidgwick & Jackson Ltd., London. 176 pp. 9/6d.

Through the medium of radio, articles and recently in a deft "Press Conference" on television, Arthur Clarke has probably done more than any other man in England to bring home to the general public the imminence of practical space travel. Certainly by the publication on both sides of the Atlantic of two excellent works on astronautics he has established himself as a leading authority in this field, and by wedding his scientific ability to a certain literary flair, he is now successfully building himself an international reputation as a scientist-author, which cannot fail to be enhanced by his present novel, now published for the first time in book form.

Critics of his earlier *Sands of Mars* and *Islands In The Sky* have pointed out weaknesses of style and characterisation, but these have been entirely overcome in *Prelude To Space.* Yet, strangely enough, this story originally appeared two years ago in America as a pocketbook. Whatever the reason for this publishing paradox, *Prelude To Space* is undoubtedly his finest novel to date.

Basically it is the story of the first manned-spaceship to leave the Earth, aptly named the *Prometheus*, and the final scene is the launching of the ship to the Moon from a British rocket-range in the Australian desert, which may well have its counterpart in the actual research station at Woomera. This may sound tame to the blasé science-fiction reader, already surfeited with galactic wars, super space-ships and Buck Rogers' type heroes. But interest and excitement are induced by the restrained realism of the preparations for the flight, the plausible explanation of the mechanics of the automatic-fuelled spaceship, and the reactions of the crew and the scientists and others responsible for this monumental landmark in Man's history—so convincing that the reader feels he is present at the actual event.

Indeed, the story opens with a professional historian being

seconded to this international project to record the events for posterity. At the headquarters of "Interplanetary" in London in 1968, Dirk Alexson meets the leading personalities of the band of scientific visionaries, and learns the history of space-flight development. With sure competent touches the technical problems are presented and solved, and, for once, scientists act convincingly human. Mr. Clarke blends this enthralling story with many eloquent passages, some nice touches of humour and philosophy, and the result is a recommended book for all readers and a perfect answer to those sceptics of interplanetary travel.

The publishers are to be congratulated for procuring the services of *New Worlds* artist Gerard Quinn for the excellent pictorial dust-wrapper, but I feel that Mr. Clarke's novels are worthy of a finer binding than has been used up to now.

Adventures In Tomorrow Anthology edited by Kendell Foster Crossen. The Bodley Head, London. 240 pp. 10/6.

One major complaint recently levelled against British editions of American anthologies is that the necessary pruning for the smaller size book has often been crudely executed. With this first venture by an old-established publisher into the science fiction field, the transition has been effected with excellent results. Only two stories have been omitted, one a trivial piece unworthy of Isaac Asimov, the other a sheer fantasy by C. L. Moore, leaving a well balanced selection including at least three treasures.

Mr. Crossen's introduction "Houyhnhnms & Company" is an interesting, witty and brief history of the development of science fiction, which together with the editorial comments prefacing each temporal division of the book (from 1960 to 1,000,000 A.D.), will do much to initiate the newcomer to an appreciation of science fiction and prepare him for the emotional impact of the first four stories comprising the Atomic Age.

Walter Van Tilburg's "The Portable Phonograph" is a poignant episode of the aftermath of atomic destruction, the more human in comparison with the brittle quality of Bradbury's oft reprinted "There Will Come Soft Rains," and the irony of Ward Moore's "Flying Dutchman." A touch of humour permeates the rest of the book, naturally enough, since Crossen's own stories all have this saving grace, and here is van Vogt writing "Automaton" with tongue in cheek,

Kuttner's "Voice Of The Lobster," and Crossen's own "Restricted Clientele." Anthony Boucher's "Transfer Point" provides a neat twist on time-travel and how a top science fiction author found his plots—maybe!

Others present are Forrest Ackerman, Theodore Sturgeon, Robert Arthur, Leigh Brackett and Sam Merwin. The tasteful dust-jacket says truthfully that *Adventures In Tomorrow* is a galaxy of science fiction stories! Recommended.

Galaxy Reader Of Science Fiction Anthology edited by H. L. Gold. Grayson & Grayson, London. 254 pp. 9/6.

The latest addition to the *Adventures In Science Fiction* series is an extremely emaciated version of the original collection which really did skim the cream of *Galaxy's* first two years of publication. Here are but thirteen of the original thirty-three, all excellent but not necessarily the best. It hardly matters, though, as long as the remaining twenty are offered to the British reader at a later date. It is gratifying to note that both the stories by the only British authors represented are included in this collection. They are Peter Phillips' amusing "Field Study" and John Christopher's "Man Of Destiny," a tender story of a castaway spaceman who might have been a god to the natives, but instead finds humility and peace. Also included are the two novelettes "Inside Earth" by Poul Anderson and Theodore Sturgeon's memorable "The Stars Are The Styx."

The meteoric success of Horace Gold's *Galaxy Science Fiction* magazine in the last few years was due in the main to a new editorial policy of lifting the many taboos obtaining up to that time, and allowing established (and brilliant new), authors to concentrate on the more mature and human approach to problems science-fictional, rather than technically correct science or pure space-opera. Thus constituting a refreshing attack on accepted standards which, more than any other single factor, caused the present renaissance (whether for good or bad), in science fiction, one result of which is that it has become an established facet of modern reading tastes, and has made possible such attractive, reasonably priced offerings such as this volume. Incidentally, the dust jacket shows much improvement over earlier books in this series. Recommended.

LESLIE FLOOD.

Player Piano. A novel by Kurt Vonnegut, Jnr. Macmillan & Co. Ltd., London. 352 pp. 12/6.

Few readers would realise that the enigmatic title of this story covers one of the finest science fiction stories in recent years; in fact, it is a strong contender for the 1953 International Fantasy Award, the result of which has not been announced at the time of writing. But I should warn you that it is not the type of science fiction story one is accustomed to read from known authors in the field, nor one produced by publishers who are specialising in the genre. Scribner's published the American edition in 1952 and Macmillan have just brought out the British edition, and the fact that the latter edition produced a review in the *Times Literary Supplement* is sufficient to set it apart from the ordinary run-of-the-mill future novels.

As a curtain raiser, Mr. Vonnegut sets the scene on the first page—the Electronic Age is in full swing ten years after the Second Industrial Revolution, which was won on the production lines. America has entered an era of push-button placidity, governed mainly by Managers and Engineers, few of her people having to actually *work*—although those unable to compete with the machine age find themselves either in the Army or the "Reeks and Wrecks" as the Reconstruction and Reclamation Corp call themselves. As in most (theoretical), Utopian societies, the masses should be happy, but there is a subversive movement afoot to overthrow the machines and get back to the "good old days."

Unwitting leader in this movement is Doctor Paul Proteus, himself one of the foremost engineers, who cannot understand his own heretical ideas. It is the story of the Doctor's fumbling quest to find the Truth (as he sees it), which makes up the greater part of this brilliant, witty, humanised novel, which pokes fun at so many established American fads, fashions and fallacies as we know them today, as well as established customs.

Running through the entire book from jacket title to The End is one of the strongest veins of satire to be written for many a year—a fact that most reviewers seem to have entirely overlooked or deliberately ignored. For instance, there is EPICAC XIV, the wonder machine which calculates how many refrigerators, dinner plates, door knobs, pinochle decks, and other commodities Americans will need—and Checker Charlie, the electronic checker-playing machine which couldn't

be beaten by a human brain but went to its death surrounded by green smoke and wildly flickering lights, because it didn't understand loose connections. And a host of other extrapolations of to-day's machine age which make up background colour.

The Puppet Masters. A novel by Robert A. Heinlein. Museum Press Ltd., London. 191 pp. 9/6d.

For twelve years Robert Heinlein has held the position of one of the top writers of science fiction in the world. In fact, many times, by more than one reviewer, he has been acknowledged the best. Throughout his earlier novels he has attempted to portray the vast changes humanity will undoubetdly see in the centuries to come, by basing scientific thinking with his fiction—the political, sociological, mechanical, even religious implications which may well grow up from the seeds we are planting today.

In *The Puppet Masters*, however, we find a new and different Heinlein, equally as thought-provoking as before but with a dynamic quality about the action and suspense I cannot remember earlier. Instead of working his theme into the future, he has Earth visited by an alien spaceship similar to a flying saucer—and from there on any resemblance to other stories vanishes. Investigators sent to study the ship just disappear. By the time the authorities catch up with the inhabitants of the ship—and find they are a parasitic slug which takes over and dominates the minds and bodies of human beings—half the country is already under the invaders' control. The attempt to catch one of the slugs alive for investigation leads the reader through a maze of adventures and suspense piles upon suspense in the best traditions of the detective story.

The author informs me that one character in the story is not fictitious—and that is Pirate, the cat, who was taken from his own feline, and who leads a much more exalted life than his fictional counterpart, having his own built-in cafetaria and private exit in the "perfect servantless house" the author designed and recently had built in Colorado Springs.

JOHN CARNELL.

American Book News

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Recently published:

The Golden Apples Of The Sun by Ray Bradbury, Doubleday, $3.00. A collection of 22 of the author's off-trail fantasies non-science-fictional, drawn from *Collier's, The New Yorker, Charm, The American Mercury, Saturday Evening Post* and other sources. Due for British publication.

Modern Science Fiction: Its Meaning And Its Future, a symposium edited by Reginald Bretnor. Coward-McCann $3.75.

Here for the first time is a modern non-fiction book dealing with all the facets of science fiction—how it has grown up; its effects upon television, radio and films; its future. Brilliantly chapterised by such specialists as Campbell, Boucher, Pratt, de Camp, Asimov, Clarke, Wylie, Heard and the editor, and others, it is a book which every publisher, author and would-be author should have as a reference work, as well as every reader.

Science Fiction Adventures In Dimensions. An anthology edited by Groff Conklin. Vanguard $2.95.

Editor Conklin is now one of the foremost producers of big-book collections in America. In this latest edition from Vanguard he presents another 23 stories hand-picked from the works of outstanding authors in the field.

The Best From Fantasy and Science Fiction, 2nd Series, edited by Anthony Boucher and J. Francis McComas. Little, Brown $3.00. Eighteen stories which skim the cream from the second year of the Boucher-McComas literary gem magazine by the same title.

King Conan by Robert E. Howard. Gnome Press $3.00.

The third in the Conan series of stories dealing with the Hyborean Age and the erstwhile adventures of Conan the Cimmerian, containing five more long tales.

Worlds Of Tomorrow. An anthology edited by August Derleth. Pellegrini & Cudahy $3.95. Nineteen stories, mostly of modern vintage.

The Currents Of Space. A novel by Isaac Asimov. Doubleday $2.75. A new story, above average.

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